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ABSTRACT

This manual is a resource guide for physical education teachers, program directors, special education teachers and administrators, and parents of the handicapped. It provides direction for the development of physical education programs for handicapped children. Chapters discuss: (1) identification, assessment, and evaluation of special needs; (2) activity programming; (3) program organization; (4) administrative aspects; (5) specific disability considerations; and (6) behavior management. (CJ)

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Improving Physical Education For The Handicapped In Ohio

Guidelines For Adapted Physical Education

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Guidelines for Adapted Physical Education

Prepared through the means of
The Training Project in Adapted Physical Education
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for the Handicapped (B.E.H.)

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Guidelines for Adapted Physical Education

This manual is designed as a resource guide for physical education teachers, program directors, special education teachers and administrators, school administrators, school board members, and parents of the handicapped. The publication serves to provide direction for the development of physical education programs for all handicapped children and extend their rightful participation in educational programs fostering total development, including physical and motor development through involvement in physical education.

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CONTENTS

Foreword: A Viewpoint for Adapted Physical Education 3
The Need for Adapted Physical Education 3
The Purpose of the Guidelines 4
Using the Guidelines 4

Chapter One: Identification, Assessment and Evaluation 5
Introduction 5
Identification of Handicapped Children 5
Screening and Assessment 6
The Programming Category Structure 6
Criteria for Type of Programming 7
Evaluation 7
Screening, Assessment and Evaluation Tools 8
A. Chart of Assessment Tools by Developmental Levels and Areas of Concern 8
B. Assessment Abstracts 9
A Class Screening Tool 9
"Kraus-Weber Strength Test" 9
"Wetzel Grid" 9
"Meredith Physical Growth Record" 9
"Washington Elementary School Physical Fitness Test" 12
"AAHPER Youth Fitness Test" — President's Council on Physical Fitness and Sports Test 12
"Fleishman's Factor Analytic Catalogue of Fitness" 12
"Manual Muscle Testing" 12
"Denver Developmental Screening Tool" 12
"O.S.U. Scale of Intra-Gross Motor Assessment" 12
"Developmental Test of Visual Motor Integration" 13
"Frosting Developmental Test of Visual Perception" 13
"Purdue Perceptual Motor Survey" 13
A Social Assessment Procedure 13
C. References 15

Chapter Two: Programming 17
Programming Objectives 17
Game and Activity Adaptation 17
Programming for Perceptual Motor Development 18

Chapter Three: Organization of the Adapted Physical Education Program 21
The Physical Education Interdisciplinary Advisory Committee 21
The Members and Roles of The Physical Education Interdisciplinary Advisory Committee 21
Coordination of The Physical Education Interdisciplinary Advisory Committee 21
Parent Involvement 22
Public Relations 22

Chapter Four Outline: Administration of the Adapted Physical Education Program 23
Facilities 23
Equipment 23
Equipment 23
Minimum Equipment 23
Modified Program Examples 23
Remedial Program Examples 23
Developmental Program Examples 23
Normalization and Mainstreaming 23
Scheduling 25
Regular Class Scheduling 25
Modified Class Scheduling 25
Combined Regular and Special Class Scheduling 25
Special Class Scheduling 25

1

Chapter Five: Specific Disability Considerations 27
Specified Disabilities 27
Anemia 27
Arthritis 27
Cardiac Disorders 28
Cerebral Palsy 29
Congenital Spinal Malformations 30
Convulsive Disorders 30
Diabetes 31
Dysmenorrhea 32
Emotional Disturbance 32
Hearing Impaired 33
Impaired Physical Fitness 33
Infectious Diseases 33
Joint and Muscle Disabilities: Acute 34
Learning Disabilities 34
Leukemia 35
Mental Retardation 35
Orthopedic and Neurologic Disorders 36
Post Operative Conditions 37
Postural Deviations: Functional 37
Pulmonary Disorders 38
Visually Impaired 38
Other Handicapping Conditions As Defined by P.L. 94-142 39
Resources from Public Service Organizations 39
References for Categorical Problem Chart 40
Resource Chart for Categorical Problems 41
National Organizations and Groups Serving The Handicapped 42

Chapter Six: Overview of Behavior Management and Teaching Styles 45
Purposes of Behavior Management 45
A Learning Model 45
The Concept of Reinforcement 45
Using Play as a Reinforcer 45
Tokens as Reinforcers 45
Principles of Learning 45
Premack's Principle 46
Criticism Trap 46
Perspective on Teaching Styles 46

Appendix 49
Sample Letter from School to Physician 50
Sample Letter from School to Physician 51
Sample Referral Form from Physician to School 52
Referral from Physician to School—Sample Form 53
Sample Letter to Parents from School 54

Selected Bibliography 55

2

FOREWORD

A VIEWPOINT FOR ADAPTED PHYSICAL EDUCATION

The Need for Adapted Physical Education

The purpose of physical education for the so-called normal child has often been described as physical growth, social and psychological growth and recreational growth. The development of organic energy systems, strength and gross motor skills has always been a primary concern of physical educators. Psychologically, the goal of physical education is to develop perceptual abilities as well as social and emotional well-being. Today, in a culture which is becoming increasingly leisure oriented, the development of recreational skills is seen as important by our society and by those in the field of physical education.

As we examine the population of handicapped children in light of the general purposes of physical education we find that these purposes are just as important, perhaps even more important, to handicapped children than they are to "normal" children. Organic fitness and adequate strength are necessary for healthful living for handicapped children. Indeed, it is toward the level of gross motor development that some types of handicapped children need to focus their primary educational energies (for example, profoundly retarded, trainable mentally retarded, physically handicapped, etc.).

In addition, the development of perceptual abilities is important particularly for those children with specific learning disabilities. Social and emotional growth is more critical for handicapped children than for those who are more "normal" because of the profound adjustments which need to be made in order to function in society. Finally, the deinstitutionalization trend has transplanted both mentally and physically disabled persons from an environment and time which were wholly regimented to one in which free time predominates. Hence, training in leisure and recreational skills for the disabled seems necessary if they are to adjust to society.

Recent legislation on the federal and state levels has mandated educational programs for all handicapped children, ages three through twenty-one. Public Law 94-142 uses the term "handicapped children" as meaning children evaluated as being mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, orthopedically impaired, other health impaired, deaf-blind, multi-handicapped, or as having specific learning disabilities, who because of those impairments need special education and related services.

"Special education" as defined in the aforementioned law means individually designed instruction, at no cost to the parent, to meet the unique needs of a handicapped child, including classroom instruction, instruction in physical education, home instruction, and instruction in hospitals and institutions.

There are currently 170,000 children of school age with physical or mental disabilities receiving special educational services in Ohio.[1] Most of these children receive services through regular or special classes in the public schools. In fact, the predominant educational trend regarding exceptional children is "mainstreaming." Mainstreaming is the integration of exceptional children according to their educational needs with normal children to the greatest possible extent of related services available in the regular school system. Mainstreaming, correctly implemented, demands a great commitment from all school personnel, including physical educators. It cannot be overemphasized that the number of handicapped children in the average public school classroom will increase in the near future. Therefore, it becomes increasingly necessary that the average classroom teacher's skills will have to include the necessary techniques to adequately and equitably respond to the needs of the handicapped child.

Public Law 94-142 stipulates that an "Individualized Education Program" (IEP) be written for each child and include 1) a statement of the child's present levels of educational performance; 2) a statement of annual goals, including short term instructional objectives; 3) a statement of the specific special education and related services to be provided for the child, and the extent to which the child will be able to particpate in regular educational programs; 4) projected dates for initiation of services and the anticipated duration of the services; and 5) appropriate objective criteria and evaluation procedures and schedules for determining, on at least an annual basis, whether the short term instructional objectives are being achieved.

The state legislation, Amended Substitute House Bill 455, echoes the federal mandate and provides for the development of a state plan for the implementation of the special programs.

Greater detail will be provided in later sections of these guidelines about how these laws directly affect physical education programming. Copies of P.L. 94-142 may be requested from your congressman. H.B. 455 may be obtained from your state senator or representative.

The Purpose of the Guidelines

The purpose of this guide is to aid the teacher in complying with the legislative mandates for handicapped children in physical education classes. The following chapters have been developed to provide the teacher of adapted physical education and the classroom teacher with a direction for an adapted physical education program which is consistent with the legislation:

1. Identification, Assessment and Evaluation: Guidelines for determining exceptional needs and how to classify those needs.
2. Programming: guidelines on how to choose activities based on the assessed needs.
3. Organization: guidelines on the function of an interdisciplinary advisory committee designed to meet the needs of handicapped children in physical education.
4. Administrative Aspects: guidelines for choosing facilities, equipment and scheduling possibilities when starting an adapted physical education program.
5. Specific Disability Considerations: the general implications that specific disabilities hold for physical education.
6. Behavior Management: guidelines for the application of behavioral learning principles to the physical education of handicapped children.

4

Using the Guidelines

This publication is not a "program" as such. Indeed, none could be developed to meet the unique and varying needs of all handicapped children. However, this guide aims to provide a direction for the development of your program based on an assessment — programming — evaluation model. Its function is that of leading the physical educator and classroom teacher toward activities which can be implemented and which will have the greatest potential for meeting the needs of handicapped children. It is merely a starting point and has been developed primarily as a general inservice resource. The reader is encouraged to utilize the suggested references in the manual for more specific and comprehensive information.

CHAPTER ONE
IDENTIFICATION, ASSESSMENT AND EVALUATION

Recent legislation, namely Public Law 94-142, mandates the inclusion of physical education instruction in the special education program of any handicapped child. It defines physical education as the development of 1) physical and motor fitness; 2) fundamental motor skills and patterns; and 3) skills in aquatics, dance and individual and group games and sports (including intramural and lifetime sports).

This chapter deals with identification, assessment and evaluation, three important components in the total instructional program of adapted physical education. Identification is the process by which prospective students are referred to an adapted physical education program. The purpose of identification will be discussed in this section and suggested sources for referral will be described.

Assessment refers to the process by which a student's current skills and abilities are determined in order to establish programming priorities. This section includes general areas of concern at various developmental levels and the need for a class screening procedure to identify children who may need special consideration in physical education. The results of the identification and assessment processes will include information pertaining to a general kind of programming. Hence, this section will also include descriptions and criteria for general programming.

Evaluation is similar to assessment but is designed to determine the extent to which programming has effected a change in skills and abilities. Its importance to the legislation will be described.

To assist the reader in selecting appropriate screening, assessment and evaluation devices for a particular child, a number of tools are abstracted at the end of the chapter. A chart is provided for easy reading so the physical educator can choose a tool for specific developmental level (preschool through senior high) and a specific area of concern. Growth, basic motor skills, perceptual motor skills, posture, physical fitness and social development are included.

When the Identification-Assessment-Evaluation process is working optimally, the most successful individualized education program in physical education can be designed and implemented.

Identification

In the implementation of any kind of special program within the educational system, it is essential that candidates for the program are limited to students needing special services and that a method is developed by which candidates are chosen. When programs have no definite standards for the selection of candidates, it becomes difficult to determine which children need services and which do not. Once the limitations are recognized, it then becomes possible to determine a criterion for the placement of a child into a special program. P.L. 94-142 stresses that all children must be educated in the least restrictive environment. The screening procedure is, therefore, a means of initially identifying children who may have special needs. More thorough and individual assessment would be needed to determine the extent to which children can participate in the regular program and to what extent they require a special program of physical education.

The screening procedure is primarily used to identify the functional level and/or problems exhibited by a child. The identification may result from referral by 1) the medical and allied medical field or related services, 2) an I.E.P. team, 3) classroom teachers, 4) parents, or 5) through a general physical education class screening.

The *medical doctor* is the only person legally responsible to suggest program activities which are inappropriate for students with medical problems. This fact should make the physical educator realize that a physician is a very important member of the adapted physical education interdisciplinary advisory committee. A physician should be involved in the program from the outset as a consultant to its organization, as well as a prescriptor for activities. The *school nurse* may discover a physical or medical abnormality and refer the child to the physician.

A form for recording results of medical examinations and recommendations should be developed by the interdisciplinary advisory committee with cooperative input from the physician and physical educator. Appropriate medical considerations must be correlated with adequate program activities.

There is no one best medical form to use. Physicians undoubtedly would be more comfortable using a form which is suitable to their needs. Likewise, the physical eductor has special needs for medical input which relate specifically to program considerations. The adapted physical educator and the physician on the committee should, therefore, interact with representatives from the local medical society to insure maximum cooperation from local physicians.

The form may also serve as the basis for a cumulative student health record to be used by the physical educator. There are several suggested forms in the Appendix from which to gain ideas.

A member of the *IEP team*, the *classroom teacher*, or a *parent* may observe behavioral or

physical problems in the child and recommend special consideration in physical education. It is only after careful assessment and review of the child's needs that placement can be made.

Finally, the *physical educator* has a responsibility to determine when a particular child would not profit from the regular physical education instructional program. Therefore, a screening procedure whereby those qualifying for an adapted physical education program can be identified is essential.

Screening and Assessment

When "screening" a group of children, the physical educator is identifying youngsters who may need special consideraton in physical education. Children thought to have some problems should be individually assessed using a multifactored evaluation approach.

The types of problems screened/assessed will change in acordance to the developmental level of the child. And, since certain problems have specific screening/assessment tools and approaches, a number of available devices will be discussed later in this chapter.

With these guidelines in mind, it is suggested that the following problems be screened at the various developmental levels:

Developmental Level	Areas to Consider
Preschool	Growth, basic motor skills, and perceptual motor development
Primary	Growth, basic motor skills, and perceptual motor development
Intermediate	Growth, posture, and basic motor skills
Junior High, Senior High	Posture, physical fitness, and select motor skills.

Although not specifically listed under the developmental levels, but certainly a very important area to consider, is social development. It should be reviewed in relation to all levels (preschool through senior high).

Assessment is one of the most important aspects of the total educational program, for without it an appropriate program of instructional activities can not be developed. Indeed, the federal law which gives the handicapped population the right to an education at public expense, places a high priority on the place of evaluation in the education process. P.L. 94-142 explicitly requires instruction in physical education on an individualized basis. The following requirements are included in the clause on individual education programs:

A) a statement of the present levels of educational performance of such child;
B) a statement of annual goals, including short term instructional objectives;
C) a statement of the specific educational services to be provided to such child, and the extent to which such child will be able to participate in the regular educational programs; and
D) the projected date for initiation and anticipated duration of such services, and appropriate objective criteria, and evaluation procedures, and schedules for determining on at least an annual basis whether instructional objectives are being achieved.

Information obtained from the screening/assessment process will conceivably serve several purposes. First, the information can be used to write a statement regarding the child's present level of motor functioning. This is of great value to the interdisciplinary team (IEP team) which is responsible for writing the individualized education program.

More specifically, the screening/assessment findings serve as a basis for the IEP team and physical educator to establish short term objectives and annual goals for the handicapped child. Based on these objectives, decisions relative to appropriate placement as referred to in The Programming Category Structure discussed later in this chapter can be rendered.

Basic information obtained through the screening/assessment process will also serve as a means to measure effectiveness of the program when reviewed annually as mandated in P.L. 94-142. The physical educator can determine to what extent the short term objectives are being achieved and re-evaluate the direction of the child's individualized education plan.

Utilizing the appropriate screening/assessment tools abstracted at the end of this chapter for the developmental level of a specific child, the physical educator can recommend program placement. The Programming Category Structure serves as a class placement guide and takes into account the child's motor needs.

The Programming Category Structure

At the completion of the screening and assessment processes, it is suggested that the child be recommended for one of the following types of programs:

1. Unrestricted (totally mainstreamed)
2. Modified (partially mainstreamed)
   - Vigorous
   - Moderate
   - Mild
3. Remedial (Partially mainstreamed)
4. Developmental

The preceding categories serve as class placement guides. It should be kept in mind that the child's education must be carried out in the least restrictive environment. Unrestricted programming (total mainstreaming) would involve placement into a regular physical education class. A normal curriculum of movement activities, sports and leisure skills would make up the course content.

Modified programming would include activities which are in the regular curriculum but structured to meet the individual student's needs. Remedial curriculum would utilize prescriptive exercises and games which are intended to improve a specific or medical disability. The developmental program would include activities which improve basic motor and perceptual ability factors needed specificly by a student.

Criteria for Type of Programming

Unrestricted (totally mainstreamed): At the completion of the screening process, those students who have no physical or medical disability, or whose disabilities are acute and temporary would be recommended for this type of programming. These students will have had to pass a screening procedure by the physical educator, as well as any other informal screening process undertaken by the nurse, guidance counselor or classroom teacher. Acute and temporary disabilities are defined as those which will disappear within a matter of several days, for example, influenza or a slight sprain. Children, who are expected to be able to participate fully in the regular curriculum within a week or two, should be placed in the regular program.

Modified: Students who have disabilities which will not allow their participation in the regular program in the very near future, and whose disabilities cannot be remediated or stabilized by specific exercises, should be recommended for modified programming. These disabilities are usually physician-diagnosed and the student would be recommended for one of the following modified programs by the physician: vigorous, moderate or mild. Students who have a chronic condition which does not restrict strenuous participation, but will cause exclusion from several ativities in the regular class, should be classified in the vigorous area. Some cerebral palsied or emotionally disturbed children may fit in this category.

Students who have a physician's recommendation to avoid very strenuous forms of physical activity would be classified in the moderate area. Some classes of cardiopathy and post-operative patients would qualify here.

Some children may be restricted by the physician from any form of gross body exercise. They should be classified in the mild category. Extreme cases of cardiopathy patients would qualify for this category in the event they were allowed to attend school. Such students would engage in quiet recreational type activities.

Remedial: Students who have conditions which can be improved through prescriptive exercises, and those with degenerative problems which might be stabilized through exercises, should be recommended for this type of programming. Students with cerebral palsy who are not enrolled in a physical therapy program would be included, as well as students with severe functional posture deviations and cases of low physical fitness. Muscular dystrophy is an example of a degenerative condition in which progress can be somewhat retarded by exercise.

Developmental: The developmental program should consist of a curriculum to develop basic perceptual and motor ability factors, as well as specific gross-motor skills. Since most perceptual motor factors are a preschool and elementary phenomena, developmental programs would most likely be instituted on the elementary level. However, fitness programs may also be classified as developmental and, therefore, instituted on the secondary levels. Students in this category are identified by appreciable deviation from the mean on one or more perceptual motor or fitness assessment devices. Such devices will be abstracted later in this section.

Evaluation

As education becomes more and more accountable, objective evaluation becomes more and more important. However, the purpose of evaluation goes even beyond the accountability aspect. Evaluation serves as a feedback to the learner regarding his or her performance. Furthermore, it allows the physical educator to establish individual priorities in specific program areas, and thereby initiate program alterations according to the changing needs of the child. In accordance with P.L. 94-142, evaluation procedures must be conducted annually to determine if the short term objectives are being achieved.

One of the purposes of this publication is to provide the physical educator with some of the basic resources necessary to construct a physical education program for handicapped children based on an assessment — programming — evaluation model. Therefore, this chapter includes abstracts of several screening, assessment and evaluation instruments in several areas of physical education which may be chosen for this process.

Screening, Assessment and Evaluation Tools

The following chart lists all the tools abstracted at the end of this section. The X's indicate the applicable developmental levels and the identified areas of concerns. The abstracts are designed to enable the physical educator to select instruments for screening, assessment and evaluation which would be most appropriate to the particular situation. A bibliography appears at the end of the chapter for more detailed information on the tools listed.

It should be noted that the chart of tools and their abstracts is not designed to be comprehensive in nature but is merely a sample representation of some of the tools available to the physical educator. For those interested in obtaining additional tools for the handicapped population, a review of *Testing for Impaired, Disabled and Handicapped Individuals* available from the *American Alliance for Health, Physical Education and Recreation* would be recommended.

SCREENING, ASSESSMENT AND EVALUATION TOOLS CHART

TOOLS	Developmental Levels				Areas of Concern					
	Preschool	Primary	Intermediate	Junior-Senior High	Posture	Growth and Development	Physical Fitness	Basic Motor Skills	Perceptual Motor Development	Social Development
1. Class Screening Tool	•	•	•	•	•					
2. Knauss-Weber Strength Test		•	•	•	•					
3. Wetzel Grid	•	•	•	•		•				
4. Meredith Physical Growth Record		•	•	•		•				
5. Washington Elementary School Physical Fitness Test		•	•				•			
6. AAHPER Youth Fitness Test		•	•	•			•			
7. Fleishman's Factor Analytic Catalogue of Fitness				•			•			
8. Manual Muscle Testing				•			•			
9. Denver Developmental Screening Tool	•							•		
10. O.S.U. Scale of Intra-Gross Motor Assessment	•	•	•					•		
11. Developmental Test of Visual Motor Integration	•	•							•	
12. IFrostig Developmental Test of Visual Perception	•	•							•	
13. Purdue Perceptual Motor Survey		•							•	
14. Social Assessment	•	•	•	•						•

ASSESSMENT ABSTRACTS

1. Class Screening Procedure

The purpose of the physical education class screening procedure is to detect apparent physical and motor abnormalities which warrant consideration for special programming and which may not have appeared in the student's health records. The major areas of interest for this examination are posture and gait. Little class time is necessary for these examinations, as a large number of students can be appraised in a short period of time. This process does not replace an extensive individualized assessment of candidates for programing. A detailed assessment is necessary for adequate diagnosis and prescription of specific activities. Screening is a case-finding process to identify students who need some kind of specific programming, the nature of which can be determined after assessment on an individual basis. This procedure is most applicable to the secondary physical education program.

Section "A"* of the screening form is devoted to medical findings. Students often have been seen by more than one physician and may know of some problem which does not appear on the medical examination which the family doctor completed. The instructor should read aloud, to the assembled class, the following list: rheumatic fever, back pains, long illness, post-operative conditions, heart conditions, joint injuries, epilepsy, conditions present since birth, and any other health problems. Students who have experienced any of the above should be instructed to see the teacher after class in order to record the data.

Children should be dressed in bathing suits or in such a way that postural deviations are readily discernible. Examining children as a group saves time and makes comparison easier. Individual variations are more readily detected. Therefore, five to eight children should line up facing the instructor. The children should be required to execute the following:

1. Instruct children to assume a position of attention while facing the instructor. Check items B1-B18*.
2. Instruct children to extend their arms overhead and check items C1-C2*.
3. Instruct children to do an about face. The instructor will now check items D1-D5*. Then ask the children to stand on one foot and flex the opposite leg. Examine for items D6-D8*. Repeat on the other foot.
4. Instruct children to bend forward and allow their arms to hang down in the position they would assume if reaching toward their toes. Ask them to relax in this position and not strain in reaching. Now check items E1-E3*.
5. Instruct children to stand in position and do a right face. Examine their antero-posterior postures by checking items F1-F9*.
6. Still facing right, instruct each child, starting with the first in line, to walk around the examination area while his or her individual gait is checked; Items G1-G13.*

*See Adapted Physical Education Screening Form on pages 10 and 11.

2. Kraus-Weber Strength Test:[1]

This test was designed to determine inadequate development of key postural muscle groups. It is applicable to children from grades one through ten. Norms are available. There are six items which test the following muscle groups. Strength: Abdominals plus psoas, abdominals minus psoas, psoas and lower abdominals, thoracic extensors, and lumbar extensors. Flexibility: hamstrings and lumbar extensors. This test is quite easy to administer and its value lies in the determination of children in need of exercises preventing postural deviations.

3. The Wetzel Grid:[2]

There are two different grids available to measure the physical growth and development of boys and girls throughout school life. The Baby Grid is employed for infants from birth to three years of age. The "Big" or "Regular" Grid is used for youngsters ages five to 18. After obtaining age, weight and height, the data is plotted on the panel grid. One can interpret 1) body size, 2) speed of growth, and 3) the basal heat production caloric requirement per day. Measurements taken in six-month intervals allow individual comparisons of successive observations, as well as comparisons relative to the general population. Unsatisfactory growth trends warrant further examination. This procedure is often used to screen students in physical growth and development.

4. Meredith Physical Growth Record[3]

This record provides information regarding the status and progress of physical growth for boys and girls four to 18 years of age and is easy to administer.

All that is needed is the age, weight and height of the child. This datum is applied to the Physical Growth Chart which has five levels for height (short to tall) and five levels for weight (light to heavy). If the height and weight measurements do not fall in corresponding zones (i.e., tall-heavy, average-average, short-light), the lack of similarity may be indicative of stockiness or slenderness and/or it may indicate some health failure. Such dissimilarity calls for referral to appropriate medical authorities.

Adapted Physical Education Screening Form

Class _____
Section _____
Time _____

	Grade Level											
A—Miscellaneous Disorders	1	2	3	4	5	6	7	8	9	10	11	12
A-1 Heart												
A-2 Polio												
A-3 Post-Operative												
A-4 Post Illness												
A-5 Cerebral Palsy												
A-6 Epilepsy												
A-7 Amputee												
A-8 Congenital												
A-9 Athsma												
A-10 Diabetes												
A-11 Dermatalogic												
A-12 Emotional												
A-13 Other												
B—Anterior View Feet Slightly Apart	1	2	3	4	5	6	7	8	9	10	11	12
B-1 Overweight												
B-2 Underweight												
B-3 Lateral Head Tilt												
B-4 Torticollis												
B-5 Funnel Chest												
B-6 Pigeon Breast												
B-7 Shoulders Uneven												
B-8 Hips Uneven												
B-9 Pes Cavus												
B-10 Pes Planus												
B—Anterior View Heels Together	1	2	3	4	5	6	7	8	9	10	11	12
B-11 Knock Knees												
B-12 Bow Legs												
B-13 Patella Riding												
B-14 Foot Abduction												
B-15 Foot Adduction												
B-16 Foot Pronation												
B-17 Toe Deformity												
B-18 Other												
C—Anterior Position Arms Extended 180°	1	2	3	4	5	6	7	8	9	10	11	12
C-1 Restricted Range of Motion												
C-2 Upper Extremity Deformities												

10

	Grade Level											
D—Posterior View	1	2	3	4	5	6	7	8	9	10	11	12
D-1 Shoulders Uneven												
D-2 Scoliosis												
D-3 Winged Scapula												
D-4 High Hip												
D-5 Achilles Deviation												
D-6 Plantar Surface Foot (R)												
D-7 Plantar Surface Foot (L)												
D-8 Others												
E—Posterior View Trunk Flexed	1	2	3	4	5	6	7	8	9	10	11	12
E-1 Upper Back Bilateral Asymmetry												
E-2 Flat Back												
E-3 Restricted Range of Motion												
F—Lateral View	1	2	3	4	5	6	7	8	9	10	11	12
F-1 Forward Head												
F-2 Flat Chest												
F-3 Round Shoulders												
F-4 Kyphosis												
F-5 Round Back												
F-6 Lordosis												
F-7 Kypho-lordosis												
F-8 Abdominal Ptosis												
F-9 Hyperextended Knees												
G—Gait Analysis	1	2	3	4	5	6	7	8	9	10	11	12
G-1 Non-rhythmical												
G-2 Slouching												
G-3 Shuffling												
G-4 Mincing												
G-5 Waddling												
G-6 Bouncing												
G-7 Hip Swinging												
G-8 Toeing Outward												
G-9 Toeing Inward												
G-10 Forward Lean												
G-11 Backward Lean												
G-12 Tension												
G-13 Transfer of Weight												

11

5. Washington Elementary School Physical Fitness Test:[4]

This test was designed for boys and girls, grades kindergarten through nine, with corresponding norms available. The test includes five items and no special equipment is needed for implementation.

6. The AAHPER Youth Fitness Test:[5]

(President's Council on Physical Fitness and Sports Test)

This test utilizes seven tasks to measure the general physical fitness of children from grades one through twelve. The tasks include the following: pull ups, sit ups, shuttle run, standing long jump, fifty-yard dash, softball throw for distance and the six-hundred yard run-walk. There are norms available for boys and girls, and the test administration is feasible indoors as well as outdoors. The AAHPER Special Fitness Test is available for use with either the mildly or the moderately retarded and includes norms for both groups.

7. Fleishman's Factor Analytic Catalogue of Fitness:[6]

During the mid 1950's, Fleishman conducted some very important research with the purpose of distinguishing between abilities and skills. Through the use of Factor Analysis, he attempted to determine what specific fitness tasks were highly associated with other fitness tasks. Groups of tasks which correlated highly were hypothesized as being included in the same ability group, rather than being distinct, unrelated items. For example, if four fitness test items correlated highly, only one should be included in the fitness test battery because all four items are indicative of the same underlying ability.

Fleishman discovered approximately twenty ability groups, ten of which are highly related to physical fitness. A test catalogue was developed whereby the teacher could choose one test from each ability group which could most easily be administered in that particular situation. Norms can be developed by the instructor for the class using percentiles. The ten ability factors which can be measured are explosive strength, static strength, dynamic strength, trunk strength, extent flexibility, dynamic flexibility, gross body coordination, gross body equilibrium, speed of limb movement and cardio-vascular endurance. With this resource, the instructor may construct a comprehensive fitness test battery of ten items, relatively assured that all pertinent factors are being evaluated.

8. Manual Muscle Testing:[7]

Techniques for manual muscle testing are widely used to determine the functional strength of specific muscle groups which may have atrophied as a result of injury of neuro-muscular disorder. Any muscle group in question may be examined along a continuum of functional strength as follows: 1) no contraction, 2) flicker of contraction, 3) small movement when the gravitational factor is eliminated, 4) movement against gravity, 5) movement against gravity plus some resistance, and 6) normal movement against resistance. Muscle groups are compared with the same muscle group on the opposite side of the body, and decisions of the kind of exercise to be administered to strengthen the group in question are made on the basis of the testing.

9. Denver Developmental Screening Test:[8]

This tool was developed as a quick screening device to detect developmental delay among infants and preschoolers from two weeks to six years of age. The DDST consists of four sectors: fine motor-adaptive, gross motor, language, and personal-social scales. Sections of the test can be administered with the child and performance on some levels may be reported by the parent. Norms are located directly on the score sheet. The DDST is a practical, efficient and dependable device which is inexpensive, quick and easy to administer. The gross motor sector is helpful to physical educators when determining skills to be taught.

10. The Ohio State University Scale of Intra-Gross Motor Assessment (O.S.U. SIGMA):[9]

This criterion referenced assessment tool offers flexibility in assessing basic motor skill development of normal, mentally retarded and developmentally delayed children of pre-school or elementary school age. Results provide a descriptive statement of a child's present level of motor functioning. In addition, a link between assessment and program implementation is provided through the Performance Based Curriculum (P.B.C.), an instructional program for eleven basic motor skills with sequential and progressive motor activities related to assessment information.

The contents of the 107-page manual includes administration instructions, an individual profile sheet, the O.S.U. SIGMA, the P.B.C., research information and a selected bibliography. The eleven skills are walking, stair climbing, running, throwing, catching, jumping, hopping, skipping, striking, kicking and ladder climbing.

11. Developmental Test of Visual Motor Integration:[10]

The VMI assesses a child's ability to copy designs, which in turn may reveal problems in the area of spatial relationships or directionality. There are twenty-four geometric designs arranged sequentially from a lesser to a greater degree of difficulty. The test is most appropriate for preschool and primary children, but norms exist for ages two through fifteen. It is easy to administer, and teaching suggestions for overcoming perceptual difficulties are included in the manual.

12. Frostig Developmental Test of Visual Perception:[11]

Five areas of perceptual-motor function are assessed: 1) eye-motor coordination, 2) figure-ground orientation, 3) form constancy, 4) spatial position, and 5) spatial relationships. It may be used as a screening device for ages four, five and six, or as a diagnostic tool with the Frostig program material with older learning disabled children. Norms are available, and the test yields a perceptual quotient along with a perceptual age for each area of testing. Administration is easy and expeditious and can be utilized with groups.

13. Purdue Perceptual Motor Survey:[12]

This test is appropriate for ages six through nine and norms are available. It has been standardized and tests the following ability factors: laterality, postural flexibility, general body image, rhythm, symmetrical body control, directionality, eye-foot coordination, ocular control and general muscular fitness. The PMS is one of the most comprehensive assessment devices in the area of perceptual motor development.

14. Social Assessment: The Possibility of Accurate Measurement

The area of development of social abilities in children has historically been somewhat controversial. Due to the complexity of social situations, many educators believe that an objective measure of social abilities is next to impossible. Indeed, many educators have difficulties defining specific social abilities, and what cannot be defined appears to be quite difficult to measure. However, one of the major objectives in physical education is that of social development. This aspect of development is equally important in the exceptional population. If we purport to develop children socially, we must somehow be able to assess improvement in social skills.

Most educators feel that physical education provides an excellent opportunity for the development of social skills. Game situations are actually micro-societies in that certain rules of interaction and behavior are required for successful participation. When these rules are broken, there are social consequences which may prevent enjoyable participation. Therefore, if a child learns that his or her behavior must adapt to the social situation in order for the group to be involved in meaningful activity, then it is thought that this social awareness will transfer to real life situations.

Games differ in their requirements of social skills. Some games may involve more cooperative behavior than others. For example, basketball requires a great deal more cooperation than swimming. Games should be chosen somewhat on the basis of what social skills are required and what social skills children need. The purpose of this section is to suggest guidelines for assessing which social skills children need on the basis of observations of children in social situations.

Social Assessment Procedures: There are two essential prerequisites for assessing social capabilities of children. The first is a list of social abilities which are desirable in children and which may be enhanced by participation in the physical education class. The second is a list of observable behaviors which can be matched with each social ability. For example, in basketball, passing to a teammate who has a better shot would be an observable behavior which could be matched with the social ability entitled "cooperation." Behaviors can be generated for virtually any social ability and in virtually any game which involves social interaction.

The following examples of social abilities are desirable to develop through one or more levels of the adapted physical education program:

1. Sportsmanship: The ability to graciously accept the consequences of competition regardless of whether the results of competition are equitable.
2. Pride in accomplishment: The internal satisfaction of having completed a task to the maximum of one's capability.
3. Responsibility: Carrying out the role expected of an individual as a member of society.
4. Reliability: The consistency with which an individual carries out responsibilities.
5. Rapport or recognizing the needs of others: Acknowledging that other individuals exist and that they have certain needs which may be met by social interaction. This may also involve responding to those needs.
6. Response to authority figures: Abiding by the decisions of those in authority placed by virtue of office, rather than of personality.
7. Competition: The willingness to enter into a game in which there can be only one winner, regardless of whether the competitor's abilities are equitable.

8. Cooperation: The ability to work with other members of society to achieve a common goal.
9. Leadership: The ability of an individual to recognize group goals, to determine the best way of achieving the goal, and to motivate the group to undertake a plan of action to achieve the goal.

The above are merely examples. Some are more appropriate at different levels of maturity, and others are more desirable to the particular physical educator for use in his or her program.

Once a list of abilities has been generated, the next step involves specifying behaviors which are associated with a particular social characteristic. Such behaviors vary as the situation varies, and the adapted physical educator must specify behaviors with reference to the social activities in his or her program. Indeed, cooperative behavior of primary children while playing a game of scooter soccer would be quite different from that observed in an educable mentally retarded class playing basketball.

After social abilities are chosen and behaviors matched, the instructor has only to observe the students in one or more social situations to recognize behaviors that indicate presence or lack of abilities. Thus, guidelines for assessing social skills of children in the adapted physical education program can be formulated.

Programming for Social Development: The social assessment procedure outlined in the previous section should yield the following information: 1) what social abilities are important to learn at a particular stage of development, 2) what social abilities are positively exhibited by children, and 3) what social abilities are especially lacking. This information should facilitate the physical educator to generate priorities for the development of social abilities. Social abilities which need development by the majority of the class should be given first consideration.

Next, the physical educator must determine activities which are appropriate for age groups in relation to the nature of handicapped children in the class. Then, the teacher should determine which activities require social compensatory adjustment abilities. This may be done intuitively, or it may be done by piloting the game with the class. At any rate, once the games are assessed as to their inherent social requirements, they need only be matched or adjusted to meet the students' needs.

For example, a class of students may need to develop responsibility. Sources should be explored to determine an activity which requires a great deal of responsibility, and which would be appropriate for the age groups in the class. If the class were, hypothetically, a primary class, scooter relays might be appropriate. Responsibility is involved because each member of the team has a specific job to perform at a particular time. If one member fails a responsibility, the team loses. In addition, scooter relays have very few rules and, therefore, are applicable to a primary class. Thus, a game has been selected which is appropriate to the social needs of a particular group of students.

The preceding process is a beginning toward achieving the goal of social development. But, consider the problem of the one child whose social behavior is inadequate in a particular area while the remainder of the class exhibits no such problem. An activity which is appropriate to the whole class still may be utilized by simply altering the rules or game structure for the one child who needs to develop a particular social skill.

Imagine that one child in a primary class shows no response to his or her peer's needs. In fact, others in the class are hardly noticed. The same game as above (scotter relays) could be used with simple modifications. For example, the relay could be revised so that one child would pull another who is sitting on the scooter. In that fashion, the child is required to interact with members of the team and thus would be responding to the needs of others.

This process is called staging. A game's or motor ability's structure, objectives or rules is altered in order to require a different social ability for one or more children. The process can be applied to any game from the pre-school level, to higher organized games.

The test listed is merely a sample of those available. The reader is encouraged to use the references listed on the Resource Chart in Chapter 5, page 41, for other assessment tools for specific handicapping conditions.

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16

CHAPTER TWO
PROGRAMMING

Programming Objectives

Programming objectives in adapted physical education are identical to objectives in regular physical education. These objectives are based on the following: 1) neuromuscular and cardiovascular needs, 2) social needs, 3) recreational needs and 4) interests. Public Law 94-142 specifies that physical education includes the development of: 1) physical and motor skills; 2) fundamental motor skills and patterns; and 3) skills in aquatics, dance, and individual and group games and sports (including intramural and lifetime sports). A handicapped child involved in the adapted program may warrant special consideration and/or instruction. Therefore, it is necessary to delineate extensive specific objectives for each programming category.

Children whose disabilities may not be improved through physical education are students who need to be scheduled in the modified program. Objectives for individuals in this program closely resemble those in the regular program. The difference lies in finding activities which circumvent the disability while maintaining the regular curriculum as much as possible. Activities chosen need to be altered depending on the individual and the physician's recommendations regarding the sub-categories: vigorous, moderate and mild.

Obviously, the curriculum for the mild group would involve more adaptions than either the vigorous or moderate curriculums. Each curriculum would be based upon individual strengths and weaknesses of those involved in the group.

Remedial program objectives involve the prescription of activities which can help overcome the disability. In temporary disabilities, the primary objective involves remediation to allow the child to take part in the regular program as soon as possible. Programming for temporary remedial disabilities, therefore, is deficit oriented. In more permanent disabilities, however, the goals are long range, and sufficient improvement for regular program participation is not foremost in the instructor's mind. Consequently, in addition to prescriptive exercise, the program should be broad enough to include development of social and recreational skills to enhance leisure time pursuits.

Children in the developmental program require activities which develop specific perceptual motor abilities and skills. However, programming for development of social skills and leisure time activities should not be neglected. As this program is primarily for elementary school children, it is important to take all their needs into consideration. Such a program may affect the child's perspective of physical education in the future.

Game and Activity Adaptations

Virtually all activities in the regular physical education program can be modified in one way or another with just a slight bit of imagination. The rules in games and sports are arbitrary. Strategies and movements undertaken in sports are designed with two concepts in mind: 1) to accomplish the game's objective, i.e., scoring or speed, etc., and 2) to stay within the rules while accomplishing the objectives. Since movements a child makes depend upon these two factors, altering the two factors will change the kind of behavior the child utilizes in playing the game.

Modifications may, therefore, be directed toward rule changes, equipment, or changes in the objectives of the game or activity. Generally, there should be just enough change to make it safe for children in the adapted program, while retaining as much of the original character of the game as possible.

The following charts include examples of the kinds of adaptations which may be made for activities based on the physician's recommendation as to degree of the student's involvement in the program. For students who can only participate at the moderate and mild category of involvement as determined by the physician, the following adaptations can be applied regardless of the program (regular, modified, remedial or developmental) the child may be participating in within physical education.

When adapting experiences through one or more of the various activity alterations suggested in the previous charts, the teacher must consider the value of such an adaptation in terms of how it educationally benefits the handicapped child. An adaptation is only a means and must be justified in terms of realizing observable, measurable benefits for the individual. Thus, benefits must be expressed in short term instructional objectives. In essence, the utilization of activity alterations to include the handicapped child and establishment of measurable benefits resulting from such alterations supports the major thrust of Section 504 of Public Law 93-112, The Vocational Rehabilitation Act of 1973.

Activity Adaptations — Rules and Equipment

Adaptations	Physician's Category Recommendation	
	Moderate	Mild
1. Reduce playing area to restrict movement	X	
2. Use larger equipment to make game easier or slower	X	
3. Use more players to reduce the activity of each player	X	
4. Change rules to specifically limit excess activity by individuals	X	X
5. Shorten duration of games	X	
6. Rotate players frequently to equalize activity time and provide frequent rests	X	
7. Reduce point requirements for winning	X	
8. Use free substitutions so students can limit themselves	X	
9. Plan frequent rest periods into the activity	X	
10. Allow balls to bounce or be caught in games such as volleyball	X	
11. Allow substitute runners	X	
12. Use lighter equipment	X	X
13. Substitute walking or jogging for running	X	X
14. Disallow specific movements which require injured or recuperative joints	X	X
15. Simplify exercises	X	X

Activity Adaptations — Objectives

Alteration	Category	
	Moderate	Mild
1. Substitute skill practice for games	X	
2. Remove the aspect of competition do not keep score	X	X
3. Decrease repetitions in calisthenics	X	
4. Reduce tempos in rhythmic activities and dance	X	X
5. Sustitute accuracy for distance in projectile activities	X	X
6. Substitute walking for rhythmic and non-rhythmic locomotor movements (skipping, leaping, etc.)	X	X
7. Practice form; deemphasize performance	X	
8. Substitute walking for running	X	X
9. Use stationary ball handling games		X
10. Use quiet table-games		X

Programming for Perceptual Motor Development

It is outside the scope of this publication to provide an in-depth explanation of the perceptual process and how that process affects the acquisition of complex motor skills. Perceptual motor programming materials are listed and abstracted at the end of this chapter in order to gain a more thorough understanding of this complex area.

Perceptual motor programming is based upon the individual perceptual motor assessment. The assessment should yield information about deficiencies in perceptual motor concepts rather than specific motor skills. A concept may be described as an ability factor which is prerequisite to a higher level skill. For example, directionality would be a concept which denotes a child's ability to superimpose an internal sense of direction on objects in the environment. This concept must be well developed in order for a child to copy designs correctly. Copying designs is a skill and directionality is the prerequisite concept for that skill. Perceptual motor assessments generally yield deficiencies in one or more conceptual areas, such as figure-ground orientation, visual discrimination, ocular control, etc.

A good perceptual motor program identifies activities which will stimulate the development of a closely associated concept. For example, balance activities are closely associated with the concept of laterality, which is the internal awareness of the left and right sides of the body. Since balance activities require the selective innervation of muscles on one side against muscles on

the other, an internal sense of left and right may be developed. Hence, balance tasks are activities which can help develop the perceptual-motor concept of laterality.

Interacting with any perceptual motor program is the development of fundamental or basic motor skills. Basic motor skills and perceptual motor development are interdependent and must be recognized as such if progress is to occur in both areas. In view of the necessary link between basic motor skills and perceptual motor development, it is essential that perceptual motor programming be included on the preschool and elementary education levels.

A perceptual motor program will use an area which is closely associated with a concept and construct a list of activities which are sequentially ordered from a lesser to greater degree of difficulty. The difficulty of the tasks may be altered in any of three ways: 1) by changing the criterion of performance (more or less repetitions, shorter or longer time), 2) by changing the conditions under which the task is performed (eyes off the task makes balance oriented activities more difficult than eyes on the task), and 3) by doing a task analysis (specifying movements which must take place sequentially within a skill and teaching them in order). For example, a child can't throw a ball at a target unless he can first hold the ball. Holding the ball is a task which must be sequentially placed before throwing and would, therefore, be an earlier step in a task analysis program.

By using the above information a teacher may construct his or her own programs based on the results of the assessments and on class abilities. Teacher made programs are often best as they are better suited to the particular children involved. However, following are abstracts of some previously constructed perceptual motor programs which may be of value to the adapted physical educator in the development of physical education programs.

1. *Movigenic Curriculum* by R.H. Barsch, Bulletin No. 25, (Madison, Wisconsin: Department of Public Instruction, Bureau for the Handicapped, 1965).

This curriculum is based on Barsch's movigenic theory which states that movement is a factor in all learning, and that restricted movement means restricted learning. The curriculum is broad based and includes the following concepts: muscular strength, dynamic balance, spatial awareness, body awareness, visual dynamics, auditory dynamics, kinesthesia, tactual dynamics, bilaterality, rhythm, flexibility and motor planning.

2. *Pathway School Program* by G. Getman, (Boston: Teachers Resources, 1969) and *Developing Learning Readiness: A visual motor tactile program* by Getman, Kane, and McKee, 1968.

Both of these programs are based on Getman's optometric approach to perceptual motor development. Getman's model is a stage theory which identifies levels of perceptual development as follows: 1) innate response system, 2) general motor system, 3) special motor systems, 4) ocular motor system, 5) speech motor system and 6) visualization. The "Pathway" program is designed for preschool and primary children and the following concepts are taught: eye-hand coordination, rhythm, balance, laterality, directionality and spatial organization. The "visual motor tactile program" recommends activities in the following areas: general coordination, balance, eye-hand coordination, ocular control, form perception and visual memory.

3. *The Slow Learner In the Classroom* by Newell Kephart, 2nd edition, (Columbus, Ohio, 1971).

This book contains suggested activities based on Kephart's revolutionizing approach to perceptual motor development. The program is explained in detail in the book, which is a classic in this area of education. Four major concepts of perception are included: chalkboard training, general perceptual motor training, ocular control, and training in form perception. Practically all perceptual motor theorists owe something to Dr. Kephart's contribution to the field.

4. *Programming Learning Disabilities* by Robert Valett, (Belmont, California, 1969)

Although this book does not contain any specific programmed activities per se, it is an excellent guide to teacher-constructed perceptual motor programs. A rationale for such programs, as well as suggestions for programming goals, is included. A model for constructed programs is incorporated in the text.

To implement a perceptual motor program each task must be analyzed and interfaced with the child at his or her present level of educational performance. Short term instructional objectives are designed for the areas of need or for the concepts to be developed as determined through the identificaton-assessment-evaluation process. Acquisition of the tasks represents perceptual motor development.

Physical Education Curriculums for The Handicapped

Other programming materials for physical education in general are available from the following national projects:

Project ACTIVE—A nationally validated program of physical education for all handicapping conditions from pre-kindergarten through high school consisting of seven major program areas from which to develop individualized program. Available from Project ACTIVE, Thomas M. Vodola, Project Director, Township of Ocean School District, Dow Avenue, Oakhurst, New Jersey 07755

I CAN– An instructional program in physical education which utilizes a systems approach to eight program modules for learners with special education needs with two major curriculums, namely the Primary Skills Program and Sport, Leisure and Recreation Skills Program. For additional information, contact Hubbard Scientific Company, Northbrook, Illinois 60062

PEOPLE Program—A variety of program materials including a task-analyzed physical education curriculum adapted for a variety of students with various disabilities and a guide for training high school peers to work with disabled students. Contact PEOPLE Program, Phoenix Union High School System, 2526 West Osborn Road, Phoenix, Arizona 85017.

CHAPTER THREE

ORGANIZATION OF THE ADAPTED PHYSICAL EDUCATION PROGRAM

The Physical Education Interdisciplinary Advisory Committee

Historically, the concept and practice of serving the handicapped through public school education is rather new. It has become quite clear that these children need a broad base of professional services. Thus, the interdisciplinary approach in adapted physical education is a necessity. Any thoughts that a physical educator has of running an isolated program, without input from other disciplines which are related to handicapped children, must surely be cast aside. A coordinated interdisciplinary effort is the only way we can adequately meet the needs of handicapped children.

The different members of The Physical Education Interdisciplinary Advisory Committee must succeed in communicating to the other members on the committee the relevance of their varying perspectives to the common goal of the group. The members and their roles, as well as the roles of the advisory committee, are detailed in this chapter.

The Members and Roles of The Physical Education Interdisciplinary Advisory Committee

Following is a brief description of the roles of The Physical Education Interdisciplinary Advisory Committee:

1. Administrator: This person is responsible for providing necessary personnel, facilities and equipment and should interact with the school board and other community agencies in order to obtain support funds.
2. School board member: A representative of the school board may be invited to serve as a member of the Interdisciplinary Advisory Committee (I.A.C.). This individual provides a representative of the school district's policy making body as a member of the I.A.C.
3. Adapted physical educator: This person is the key to the program. In addition to assessment, programming and evaluation, the physical educator must interact with the administration concerning equipment and facility needs, with medical personnel concerning information which may be relevant to programming, and with parents and community organizations in an effort to prove the worth of the endeavor.
4. Classroom teacher: This person is a valuable asset to the adapted physical educator. In addition to being a referral source in recognizing areas of exceptionality, the classroom teacher can provide helpful information on the behavioral characteristics of the students.
5. Physician: The medical consultant (school or designated physician) is an absolute professional and legal necessity. The physician is a source of relevant medical information which may alter program planning and can answer questions concerning the medical problems of the students which may be uncertain to the physical educator.
6. School nurse: This important person can be extremely helpful in providing advice concerning everyday medical problems. The nurse is also a liaison between the physician and the physical educator, both in recognizing problems which should be referred to the physician and in communicating the physician's recommendations to the physical educator.
7. Guidance counselor: This person, or the school psychologist, works to provide a plan for the vocational direction of the handicapped. More importantly, either, or both of these persons, is a source of relevant psychosocial information for the adapted physical educator.
8. Health teacher: This person should help the handicapped to understand and adjust to his or her disability and develop a concept of healthy living.
9. Parent representative: An important liaison between the community, parents and the program, is the PTA/PTO representative. This individual should be involved in the program enough to be able to communicate the organizations intent and direction to lend support for continual improvement.
10. Student representative: Student support of any scholastic program is always an asset. This support can be accomplished by the inclusion of a student representative whose responsibility it is to learn about the program, communicate its purpose and direction to the student body, and to have input into its goals, objectives and programming.
11. Representative from related community organizations: Community organizations which deal with the handicapped can lend support in both content and finances which are vital in the developing adapted physical education program.

Coordination of The Physical Education Interdisciplinary Advisory Committee

The first major function of The Physical Education Interdisciplinary Advisory Committee is to set the policies for the adapted program. The major outcomes of the first two or three meetings should be the following; delineation of areas of responsibility, statement of philosophy, program

directions, program structure, and a timetable for program growth and development. This model is expected to lend direction to discussions of philosophy, areas of responsibility, structure and directions. Various administrative constraints should also be discussed such as availability of funds, time schedules, equipment, and facilities.

Though an administrative policy advising group, it is recognized that individual members of the interdisciplinary advisory committee could directly or indirectly serve on the interdisciplinary team (often referred to as the IEP team) responsible for developing a child's Individualized Education Program. More specifically, members from the interdisciplinary advisory committee could be of value in the assessment process, program planning, facility arrangement and scheduling procedures. The committee plays a leadership role in determining that physical education is properly included in the least restrictive environment as mandated in P.L. 94-142. Naturally, because of a dedicated background and expertise, the physical educator should be involved when a child with a specific motor or developmental problem is being evaluated.

Another major function of the Physical Education Interdisciplinary Advisory Committee is that of referral and information sharing. This aspect becomes paramount once the program begins. The purpose of referral is to provide information which is relevant to the physical educator's planning of programming, and also to meet additional student needs which perhaps necessitate another discipline's intervention. Referral to another discipline may even be outside the domain of the interdisciplinary advisory committee described above. Some students may need services from nutritionists, ophthalmologists and optometrists, audiologists, physical therapists or occupational therapists, to name a few.

Parent Involvement

To insure success of the adapted physical education program, the parents of children in the program must be involved. Statistics indicate that when parents become involved in programming in the home, the results are much more significant than if the child merely received instructon during school hours.[1] Even when parents are not involved in home instruction, their sympathetic concern has a positive psychosocial effect on the children.

Parental involvement takes many forms. Parents may be active in community agencies which publicize and support programs for the handicapped. Parents may come to the school as paraprofessionals or teacher aides with the purpose of helping with instruction or assuming some individual instruction. Parents may train other parents to work with their handicapped children or to assist as a paraprofessional. Last, but certainly not least, parents may extend programming into their own homes.

Some of the above types of parents' involvement require training and continued guidance by a competent adapted physical educator. It is the responsibility of the physical educator and the school administrator, in conjunction with the PTA/PTO and other community organizations, to seek out parents interested in serving as aides and who are committed to being trained to work with children. Advocacy programs are excellent sources of parental participation, and the physical educator should attempt to utilize such resources.

[1] D. R. Calvert, "Parents of the Handicapped: Dimensions of Family Involvement in Early Childhood Education," *Exceptional Children*, 37: 655-659, 1971.

Public Relations

To assure adequate materials for the adapted physical education program, a strong public relations program is essential. A public relations program should have the full cooperation and approval of school administrators. In addition to attempting to sell the program, communications to the public should be informative and serve to increase public awareness of the needs of handicapped children.

There are a variety of avenues through which a strong public relations program can be produced. A multimedia presentation describing the adapted physical education program is very useful. A package may be constructed with slides, movies, and commentary for excellent use with civic groups, chambers of commerce and churches. Leaflets describing the program also are useful. Extensive use of mass media is essential. Newspapers, television and radio have much to do with shaping public opinion and should therefore, be put to constructive use. Student displays, skill demonstrations and programs serve to more directly heighten public awareness, and should be used periodically.

CHAPTER FOUR

ADMINISTRATION OF THE ADAPTED PHYSICAL EDUCATIONAL PROGRAM

Facilities

A major deterrent to the development of an adapted physical education program is the lack of adequate facilities within the school. However, this problem need not prevent the inception of a program, as effective results can occur with a minimum of resources. Not all schools can afford remedial gymnasiums, but the creative use of existing facilities is almost always possible.

A major consideration is of finding an area large enough to accommodate a class of fifteen students. Unused classrooms, stages, storage areas and sections of locker rooms could be converted to use for adapted physical education instruction. It should be noted that the lack of an existing remedial gymnasium is not an excuse for failure to institute an adapted program.

In deciding which existing areas may be converted for remedial use, certain guidelines should be considered. The area should

- be sanitary, regularly cleaned, adequately maintained, and relatively dust-free;
- have access to outside recreational areas;
- have access to shower and locker facilities;
- have adequate lighting;
- have adequate ventilation;
- be free from drafts;
- have warm floors;
- be adjacent to, or include, instructor office space;
- have ceilings high enough for apparatus;
- have clear wall space on which to mount equipment or charts; and
- be used without other classes while adapted programming is in progress.

Equipment

Just as the lack of an expensive remedial gymnasium is no excuse for failing to offer an adapted physcial education program, neither is the lack of sophisticated equipment an acceptable excuse. Reliance on expensive equipment decreases the potential scope of activities in the home. The simpler the equipment, the more likely a child will continue the program away from school. Simpler equipment is also less costly to maintain and easier to replace. For the most part, the adapted program may utilize the same equipment the regular program utilizes.

Minimum Equipment

Modified: With few exceptions, the modified group can use the same equipment as regular class participants. Additional equipment for the following recreational games may be helpful:

Archery	Golf
Badminton	Horseshoes
Bowling	Ring Toss
Chess	Shuffleboard
Croquet	Table Tennis
Deck Tennis	Tetherball

Remedial: Though the remedial group may require specific equipment to meet the instructional needs of children, many of the items suggested below may be part of the regular physical education program.

Chalk Board	Posture Screen
Chinning Bar	Record Player
Climbing Rope	Scales
Goniometer	Stall Bars
Incline Board	Table
Individual Stools	Tape Measure
Jump Ropes	Mirror
Mats	Weights or Universal Gymnasium

Developmental: Although some expensive equipment is available, much of the developmental equipment may be made or bought inexpensively. Examples include the following:

Balance Beams	Lummi Sticks
Balance Boards	Mats
Balance Sticks	Record Player
Balls	Scooters
Hoops	Stairs
Inner Tubes	Tape Measure
Jump Ropes	Timer
Ladder	Tires
	Trampoline

Normalization and Mainstreaming

In order to gain perspective on the appropriate scheduling structure to be implemented in the adapted physical education program, it is necessary to understand the purpose and intent of the mainstreaming concept in education.

A concept of normalization has recently evolved in our society whereby handicapped individuals are viewed as deserving the same basic rights as any other person of the same age. These rights include access to resources, opportunity for economic security, and access to legal protection and representation. This concept has developed as a result of societal convictions regarding the personal and social worth and value of all human beings irrespective of disabling conditions.

Visibility is another recent concept which exists when a disabled person exhibits behaviors or appearances which fail to conform to existing social expectations. The result of an individual being "visible" is the reason that society should provide for the personal and social development of the handicapped to function in society. The antithesis to visibility is "invisibility," which has been said to exist whenever a disabled person has altered his behavior to such an extent that it conforms to societal norms. Society can and should also change its expectations in order to provide a more accepting type of environment, thus making the handicapped individual less visible (or more invisible).

Normalization is viewed as the process by which society alters its expectations and the disabled can learn appropriate behaviors so that the handicapped become less and less visible. Wolfensberger's definition of "normalization" includes 1) educational techniques and processes employed so that the handicapped are not stigmatized more than necessary, 2) opportunity for the handicapped to take full advantage of their culture, 3) access to the same privileges which lead to valued roles and lives, and 4) use of the highest technical competence, equipment, and processes to attain as normal a life as possible.

Mainstreaming, as used in an educational setting, is the process by which normalization is accomplished. Originally, mainstreaming came through the courts with implications that the "equal protection clause" of the 14th Amendment was violated. Historically, both mentally and physically disabled students have been segregated into special classes and special schools. However, recent research has indicated that students with mild disabilities learn less in segregated classes than they do in regular classes. In addition, segregated classes tend to label students as "retarded" thereby making them more visible within the education system. Mainstreaming, therefore, was conceived as an alternative which called for the placement of special children into normal classes in order to promote normalization and less visibility. It was felt that mainstreaming would promote a number of psychosocial benefits for both the disabled and normal students. An introduction to those with whom the disabled must live and work was thought to be more realistic than educational segregation. For normal individuals, an awareness and acceptance of those who are different was thought to be especially beneficial.

Mainstreaming, as originally conceived, was broad and idealistic in what it hoped to achieve. It called for the wholesale placement of most mentally and physically disabled students into regular classes. As far as residential institutions were concerned, radical deinstitutionalization was advocated involving the mass placement of institutionalized persons into the community. However, it is currently believed that "total mainstreaming" is not feasible or prudent, particularly where such attempts are made without the benefit of a vast number of support and planning services.

However, given that the underlying purpose for mainstreaming is positive, a concept known as the "least restrictive environment" has evolved. The least restrictive environment calls for mainstreaming decisions to be made on an individual basis. A continuum of services is presupposed ranging from highly restrictive environments to nonrestrictive environments. In education, this cascade of services, listed from non-restrictive to restrictive includes:

- regular classes (total mainstreaming)
- regular classes with special tutors or resource teachers
- special academic classes with mainstreaming for special subject areas
- special classes in regular schools
- special schools
- special community-based residential facilities
- residential institutions

Placement into one of these levels within the continuum is based upon 1) the functional capacity and needs of the student, 2) the willingness and ability of the administration and staff to provide the appropriate special programming, and 3) the willingness and involvement of the parents in supporting the appropriate kind of programming. With full support from all participants, the ultimate long range goal is to move the student through the continuum toward total mainstreaming, a goal which is probably out of reach for some.

The question, therefore, is raised regarding how the least restrictive environment concept can be applied to an adapted physical education program in a regular school. The application of mainstreaming in such a program often appears as a matter of appropriate scheduling. The assignment of a disabled individual to a physical education class should be based upon that person's functional capacity and needs, the staff's ability to provide appropriate and least restrictive programming, and the cooperation and support of the parents. A continuum of services within the physical education program ranging from nonrestrictive to restrictive would include the following:

- *regular class* where special students are mainstreamed and little or no activity alterations are needed;

- *modified class* where special students are placed in regular classes and activity alterations are made to allow equitable participation by disabled individuals;
- *combined regular and special class* where mainstreaming occurs part of the time and development or remedial programming is undertaken during the other part in a segregated session; or
- *special class* for specific physical, motor and/or behavioral problems.

The regular class schedule is often employed in schools where special classes are utilized specifically for academic subjects and students are mainstreamed for special area subjects such as physical education, art or music. The level of the continuum is discussed more thoroughly in the following section on scheduling.

Scheduling

The type of scheduling to be arranged for a child with a handicapping problem is determined by one or a combination of the following: 1) unique needs identified in the Individualized Education Program, 2) medical factors which may establish certain functional motor behaviors undesirable for that child, or 3) needs identified through the screening-assessment process. Regardless of the factors which may determine the type of scheduling for a child, the foremost principle governing placement should be to provide the least restrictive environment.

There are two basic types of classes used for scheduling the adapted physical education program: the regular class and the special class. Any other class is simply a variation of one of the two. Outlined below are four class programs which can be utilized when scheduling a child for physical education. They are only examples, and the type of students listed as participants may vary. It is important to look at the short term instructional objectives and medical considerations, as well as individual strengths when placing any child in the least restrictive physical education environment.

Regular Class: This type of scheduling calls for total mainstreaming of the special student into the regular physical education class. Referring to the Programming Category structure discussed in chapter one, individuals placed in the unrestricted and modified-vigorous programs be scheduled for the regular class. Basically, this would include students

- who have no physical or medical disabilities,
- whose disabilities are acute and temporary, or
- who have a chronic condition which does not restrict strenuous participation, but would cause exclusion from several activities.

Few if any activity alterations are needed and the class generally can be handled by one instructor.

Modified Class: This is a regular physical education class where activity alterations are made to allow equitable participation by disabled individuals who have been mainstreamed as full time members. Participants would likely include those students portrayed in the Regular Class whose conditions cause exclusion from a number of activities. In other words, individuals in the modified-vigorous to modified-moderate programs would qualify here.

Alterations in activities are made for the individual child rather than the entire class. Examples should include having a visually impaired student use a batting tee or allowing a post-operative student to use a substitute runner during a baseball game. This type of class may be taught by one instructor or by a team of instructors.

Combined Regular and Special Class: This schedule places all students together for part of the period and separate for another part. In essence, mainstreaming occurs part of the time and developmental or remedial programming is undertaken during the other time in a segregated session. This can be instituted in several ways. If the class meets twice a week, special students might meet with the group on one day and receive specific individualized instruction and be segregated from the group on the other day. Or, all students may be scheduled together with student-monitored individualized programs developed for the handicapped students which take place while the others are involved in a group activity.

Students enrolled in the combined regular and special class would include those in the modified-moderate, remedial or developmental programming categories. Characteristically, they would

- have a physician's recommendation to avoid strenuous forms of physical activity;
- have conditions which can be improved through prescriptive activities;
- exhibit degenerative problems which might be stabilized through activities; or
- deviate appreciably on one or more perceptual motor or fitness devices.

One instructor who is well organized and conscientous can handle the combined class, but team teaching increases the possibilities of meeting students' needs. Support services or a second instructor is necessary if special students meet for a segregated session during regular class time.

Special Class: This is a self-contained physical education class for students who require extensive activity alteration and individualized programming. Members would include those in the modified-mild, remedial or developmental programming categories. In essence, students would

- be restricted by a physician from any form of gross body exercise;
- have conditions which can be improved through prescriptive activities;
- exhibit degenerative problems which might be stabilized through activities; or
- deviate appreciably on one or more perceptual motor or fitness devices.

Homogeneous grouping is unthinkable, as few students have the exact same disability and require the same prescriptive exercises. Programming should be accomplished individually within the special class structure. Students should, whenever possible, be taught to monitor their own program. This allows the instructor to circulate among students and adjust the prescriptive programs as short term objectives are met.

This type of class can function with one organized instructor, but team teaching or using aides increases the amount of direct supervision available to students. Constraints which may limit the use of the special class include the availability of instructors, facilities, equipment and students needing such a program.

Noting that the individualized approach utilized in the special class allows for maximum development of strengths and remediation of weaknesses to meet each student's unique needs, the implications would suggest its beneficial implementation in the regular class. In theory, if such a procedure were implemented with all students in all physical education classes, whether special or regular, implementation of P.L. 94-142 would automatically be achieved.

Finally, another system of scheduling includes a special program outside the structure of the typical physical education schedule. Programs may be developed after school, during study halls or activity periods, or prescriptively at home. If the need exists for such programs, there is almost always a way to develop a schedule which will meet that need.

CHAPTER FIVE

SPECIFIC DISABILITY CONSIDERATIONS

This section will deal with the most common medical and educational disabling conditions which affect children who normally attend public schools. Three aspects of each disability will be discussed: 1) a brief discription of the disease or condition, 2) the primary method of identifying or screening individuals for the condition, and 3) the implications the condition has for the adapted physical educator. Reference should be made to the resource chart at the completion of this section in lieu of footnotes for the documentation of content.

For the purposes of clarity, the reader should be alerted to the legal definition of "handicapped children" as referred to in P.L. 94-142. "Handicapped children" means those children evaluated as being mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, orthopedically impaired, other health impaired, deaf-blind, multi-handicapped, or as having specific learning disabilities, who because of those impairments need special education and related services.

Anemia

Description: Anemia is a blood condition wherein the amount of hemoglobin is insufficient to provide adequate oxygen transport to the cells in order to maintain metabolic function under normal exercise situations. The deficiency of hemoglobin may be within the red corpuscles themselves, or there may simply be a lack of red corpuscles. There are several types of anemia and also several causes, but the disorder usually manifests as easy fatigue, pale complexion, increased respiration rate and even shortness of breath.

Sickle cell hemoglobin abnormalities occur in about 10 percent of American Negroes and in other ethnic groups from Mediterranean and Near Eastern areas. Sickle cell trait, the heterozygens presence of the sickle gene, is a benign condition and by the most common of the sickle cell hemoglobin abnormalities (surveys show the trait present in 8-10 percent of American black persons). Sickle cell anemia, which occurs when both parents have the trait, is a severe chronic anemia. Fortunately, this condition is rare. Educators dealing with these populations should be aware of sickle cell anemia and its handicapping conditions.

Identification: The screening of children who have anemia should result from a medical examination. The adapted program for such children should be carried out under the direction of a physician. However, there are symptoms which, if observed in a normal child, may indicate some type of anemia. They include paleness of lips and nails, increased breathing rate, headaches during exercise, faintness, unusual weakness and excessive fatigue in moderate exercise. If such symptoms are identified, the child should be referred to a physician for diagnosis.

Implications: in consultation with the physician, children with anemia should be categorized according to their ability to withstand fatigue in either the vigorous, moderate or mild groups within the modified program. In an elementary program, there are a multitude of perceptual motor concepts which may be developed without placing undue stress on a child's metabolic capacity. Programs in hand-eye coordination, visual and auditory memory, saccadical fixation, balance, laterality, directionality and spatial relationships are just a few of the many areas which may be included in the curriculum for an anemic elementary school-age child. Programs for those concepts may be constructed by the teacher, or the previously constructed programs mentioned above may be utilized.

For the secondary student, games and activities of the moderate or mild variety are ideal and should be used in consultation with a physician. Leisure time activities may be used in this case, especially with children whose condition is hereditary and long term. In moderate cases, the modification of activities need only consist of practice in sports skills or non-competitive games. Often, children may be allowed to participate vigorously, simply limiting themselves as soon as they become fatigued. At any rate, the latter decision should be made by a physician.

27

Arthritis

Description: Arthritis is a generic term which means joint inflammation. There are many different kinds of arthritis, one type is referred to as juvenile rheumatoid arthritis. The presence of arthritis in school children is not at all uncommon and may be due to rheumatic fever. Arthritis serves to restrict motion in the affected joints which may make the muscles which transcend those joints prime candidates for disuse atrophy.

Identification: the screening process for arthritides should occur via the student's health record or medical examination. Planning for physical education should be done in consultation with a physician.

Implications: Children who have arthritis will usually be provided with a remedial program. The objectives of the program are threefold: 1) preventing deformity, 2) preventing atrophy, and 3)

maintaining normal range of motion in the joints. The prevention of deformity is necessary in especially acute cases where a patient is splinted. Isometric tensing exercises should be encouraged if such a case arises. Isotonic and isometric exercises are important for a student in a physical education program in preventing muscle atrophy. Special attention should be given to muscles of ambulation such as the gluteals, extensors and flexors of the knee and ankle. Finally, range of motion exercises should be undertaken, first passively via the therapist, and then by the student, under supervision.

Aquatic activities are especially important for children who have arthritis. All of the exercises needed may take place in the water. Furthermore, the water alleviates the need for a child to work against gravity and thereby provides a welcome respite from pain. Also, a child with arthritis functions better in the water, which makes the aquatic program useful in social development. A well planned exercise program, whether on land or in water, is essential. However, exercises should never increase pain or excessively tire an individual.

Cardiac Disorders

Description: Cardiac and cardiovascular disorders are general terms applied to any disease of the heart and blood vessels. There are quite a number of disorders which could be classified as cardiovascular, and there are also several degrees of severity within each disease. The American Heart Association names four types of cardiovascular disorders: 1) congenital heart disease; a malformation occuring during the fetal period, 2) rheumatic heart disease; a post-inflammatory scarring of the heart, valves, muscles and vessels caused by rheumatic fever, 3) hypertension; high blood pressure causing stress situations on the major portions of the cardiovascular system, and 4) arteriosclerosis; a hardening and narrowing of the coronary arteries.

Identification: The screening device for cardiopathic children is, of course, a medical examination. Due to the varied degrees of severity within a particular cardiac problem and also due to the risks involved, only a physician can adequately diagnose and recommend suitable activities.

Most physicians use standards developed by the American Heart Association in providing guidelines for activity suggestions for children with heart disease. The standards for classification are as follows:

Class I: Patients with heart disease but without resulting limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation, dyspnea, or anginal pain.

Class II: Patients with cardiac disease resulting in slight limitation of physical activity. They are comfortable at rest. Ordinary physical activity results in fatigue, palpitation, dyspnea, or anginal pain.

Class III: Patients with cardiac disease resulting in marked limitation of physical activity. They are comfortable at rest. Less than ordinary activity causes fatigue, palpitation, dyspnea, or anginal pain.

Class IV: Patients with cardiac disease resulting in ability to engage in any physical activity without discomfort. Symptoms of cardiac insufficiency or of the anginal syndrome are present even at rest. If any physical activity is undertaken, discomfort is increased.

Corollaries to the above classes, utilized for determing suitable activities, are as follows:

Class A: Patients with a cardiac disease whose ordinary physical activity need not be restricted.

Class B: Patients with cardiac disease whose ordinary physical activity need not be restricted, but who should be advised against severe or competitive physical efforts.

Class C: Patients with cardiac disease whose ordinary physical activity should be moderately restricted, and whose more strenuous efforts should be discontinued.

Class D: Patients with cardiac disease whose ordinary physical activity should be markedly restricted.

Class E: Patient with cardiac disease who should be at complete rest, confined to a bed or chair.

On the basis of the above classification which should be requested of the physician, the child should be placed in either the vigorous, moderate or mild categories. Also, a progressive exercise program has a great remedial value in cardiovascular disorders. Such an exercise program would include breathing exercises and activities to promote relaxation, in addition to short interval calisthenics. A progression for all types of exercises may be conceived as beginning in the lying position, then sitting, and finally standing and moving. The speed with which the student may move through the progression would depend on the particular child's reaction to exercise. Children who exhibit signs of fatigue, breathlessness, palpitation, and cyanosis have probably participated in all the exercise they can safely tolerate at that time.

Implications: The following principles should be considered in order to be certain that the child participates within the limits of his or her capacity:

- The instructor should adhere to the physician's recommendations.
- Highly competitive activities should be avoided or controlled and of short duration.
- Frequent rest periods should be provided.
- Movement should be slower for recuperative students.
- The instructor should be aware of cardiac stress as evidenced by shortness of breath, palpitation and cyanosis.
- The repetitions and/or cadence of all activities should be reduced.
- Socially redemptive activities should be provided to maintain appropriate emotional health.
- Socially redemptive activities should be provided to maintain appropriate emotional health.
- Precautions should be taken against other illnesses such as colds and infections.
- The instructor should plan for appropriate recreational needs of each child based on his capacity and interests.
- Activity modifications should be made on the basis of distance traveled, duration and intensity of exercise.

Cerebral Palsy (C.P.)

Description: Cerebral palsy is a condition, rather than a specific disease, which is caused by a central nervous system lesion. By definition, the lesion must take place during the developmental period of the central nervous system, i.e., either prenatally, perinatally or postnatally. The condition is non-progressive, but the symptomatic manifestations may vary with age. Furthermore, the lesion causes a motor dysfunction and usually interferes with the child's general adaptive ability.

There are six types of cerebral palsy, each having particular symptoms. The most common type is *spastic C.P.*, characterized by muscular stiffness and contractures in upper and lower extremities, exaggerated stretch reflexes and hyperactive deep tendon reflexes, inward rotation of the legs and knee flexion, and a scissors gate. The flexors are hypertonic and there is a high incidence of mental retardation in this group.

The second most prevalent condition is *athetosis*, a condition marked by the unpredictability of movement. When voluntary movement is attempted, involuntary movements seem to interfere. The athetoid's posture is usually a problem and emotional problems may accompany this condition due to its unpredictability and consequential frustration.

The third most common type is *rigidity*, which is characterized by incoordinated reciprocal muscle groups and impaired stretch reflex. The remaining three are not prevalent. *Ataxia* is mainly an equilibrium disturbance which affects attempts at ambulation. Kinesthetic awareness is lacking as is the perceptual factor of spatial relationships. Muscle tone is usually poor. *Tremor* is a dyskinetic condition characterized by rhythmic alternating contractions of flexors and extensors. Finally, *atonia* is a condition which is marked by severe flaccidity.

Identification: Although difficult to recognize in the first months of life, cerebral palsy is usually detected by a physician at a relatively early age. Many children with cerebral palsy are placed in special education since mental retardation usually appears to be associated with all types. Often, however, mental retardation is *not* actually present, and only appears to be because of the motor disabilities. The screening, therefore, has usually taken place long before the physical educator sees the child. A program of rehabilitation is usually outlined by medical professionals and the physical therapist has a great deal to offer these children.

Implications: The four common treatment strategies utilized by the medical profession are: bracing, drugs, surgery, and rehabilitation. Rehabilitation is the strategy which is especially relevant to the physical education teacher. The purposes of the rehabilitation are as follows: 1) to prevent contractures by stretching activities and range of motion exercises, 2) through tension reduction exercises to facilitate control relax appropriate muscle groups, 3) to use proprioceptive neuromuscular facilitation exercises for neuromuscular reeducation and maximum excitation of motor units to overcome paralysis, 4) to strengthen development through exercises of reciprocal muscle groups, 5) to provide postural exercises through stretching and strengthening appropriate muscle groups, and 6) to provide gait training for improving balance and perception.

There are differences of opinion as the role of the physical educator in the rehabilitation process. Some believe that only the medical and allied medical professions should utilize therapeutic exercise for the above purposes. Others believe that the physical educator has an important responsibility in the rehabilitation especially where the child is not involved in a physical therapy clinic, or where the physical therapy is sporadic. Even in cases where a therapeutic program is undertaken by a physical therapist, the adapted physical educator can reinforce work

done by the therapist through interdisciplinary interaction.

There are basically three areas of programming in physical education for the cerebral palsied child: 1) muscular rehabilitation, 2) perceptual development and 3) social development. Muscular rehabilitation should involve programming for the exercise types mentioned above. Perceptual development is particularly important for the palsied child. The most common problems are found in the following areas: balance, spatial relationships, figure-ground orientation and ocular tracking. Finally, social development should be a major emphasis in physical education. This area of development usually does not take place with a physical therapy session because the child may only interact socially with one other person; the therapist. Seldom does organized peer interaction take place in the PT setting. Consequently, group activities and games should be a major part of the physical education curriculum. The activities and games should be modified according to the specific disabilities encountered as previously described in this manual. Also, methods of social programming should be instituted as described in the section on social development.

The priorities of programming in physical education for the cerebral palsied child depends upon these two general factors: 1) the type of cerebral palsy involved and 2) whether the child is currently involved in a physical therapy program. Different types of C.P. warrant different programming. The spastic needs gait training and range of motion exercises. The athetoid needs relaxation training to facilitate muscular control. The ataxic needs a great deal of perceptual activities, particularly in terms of balance. Furthermore, a child involved in a regular physical therapy program does not need as much muscular rehabilitative emphasis as a child who is not in such a program. Social development and perception would take a higher priority in such a case.

The physical educator will be doing an adequate job with a palsied child if the above priority suggestions are part of the program along with the development of recreational interests and skills. Leisure time activities are important in that they enable the child to enhance social development and enjoy a more independent and satisfying lifestyle in spite of the presence of this condition.

Congenital Spinal Malformations

Description: Congenital spinal malformations are those conditions which are characterized by a malformation of the vertebral column which is present at birth. The most common types are spina bifida, meningomyelocele, spondylolisthesis, spondylolysis. Spinda bifida and meningomyelocele are conditions caused by the failure of the posterior aspect of the vertebrae to close over the spinal chord. Spondylolysis and spondylolisthesis are conditions caused by malformations of either neural arch of usually the fifth lumbar vertebrae. The symptoms of all the above conditions are quite variable and range from no symptoms at all, to paralysis in spina bifida and meningomyelocele, and severe low back pain in spondylolysis and spondylolisthesis.

Identifications: The diagnosis for the above conditions can only be accomplished by the physician. Indeed, a routine medical examination may not reveal some of the above conditions if the child is asymptomatic. X-rays must be utilized to determine the nature and the extent of the condition, even when symptoms are present.

Implications: Due to the variable range of symptoms, a generalized programming direction for any of the above conditions is out of the question. The physician's recommendations must be adhered to as his knowledge of the medical implications of the individual's condition is much more comprehensive. Programming in physical education for such cases must be based on each child's individual capacities and limitations; each case is unique. However, when low back pain exists as a result of spondylolysis or spondylolisthesis, an exercise program for the prevention of aggravation and for remediating the painful symptomology may be undertaken similar to a program for functional lordosis. The abdominals should be strengthed, the lumbar extensors should be stretched as should the hip flexors. Furthermore, games which cause excess fatigue and which involve a great deal of trunk rotation are contraindicated. Contact sports and weight lifting are not usually recommended when symptoms are present.

Convulsive Disorders (Epilepsy)

Description: Epilepsy is a clinical syndrome of a variety of types of seizures caused by electrochemical imbalances in the brain. The varied imbalances manifest as basically one of six clinical seizure-types. Jacksonian seizures are characterized by alternating contractions of muscles in a single extremity or localized part of the body, which progresses ditstal to proximal. Minor motor seizures are characterized by localized non-progressive contractions of muscles on just one body part or on one side of the body. Grand mal seizures usually occur in three phases. During the tonic phase, the individual becomes rigid and falls in the direction he is leaning. He may also hold his breath and become cyanotic. During the clonic phase most major

skeletal muscle groups contract alternatively causing writhing, twisting and jerking movements. During the relaxed stuporous phase, the individual may be confused, or if the seizure is prolonged, may fall into a deep sleep. Psychomotor seizures are characterized by mental confusion, the cessation of the person's current activity, poorly coordinated and purposeless movements, aggressive or destructive behavior, and incoherent speech. Petit mal seizures ("absence spells") involve the loss of consciousness for only a few seconds. Finally, autonomic seizures are marked by autonomic symptoms, such as sweating, rapid heart rate, high blood pressure and even fear.

Identification: Due to the electrochemical nature of epilepsy, screening and treatment is primarily a medical responsiblity. However, educators, upon observation of the above seizures, should refer the child to a physician if the child has been previously undiagnosed. The treatment must be managed by a physician. Therapeutic drugs are usually prescribed for an anti-convulsant purpose (phenobarbital, dilantin, sodium valporate, etc.).

Implications: The purposes of physical education for the epileptic child is not appreciably different from those for normal children; they should be based on the social, perceptual motor and recreational needs of the child. Historically, a needless social stigma has been attached to epilepsy, often precipitating some pscyological problems. Therefore, a major priority of the physical education program should be that of social development. However, there is no need to separate the epileptic by neglecting the perceptual motor and recreational activities which are a part of the regular program.

In the event of a seizure, the poise of the physical educator, and his calm management of the situation will prevent a minor problem from becoming a physical or psychological handicap. Lack of poise may result in physical or psychological injury which would not have occurred if such hysterical attention had not been evident. When a seizure occurs, the physical educator should calmly manage the child and the class in order to prevent any possible injury which could be self-inflicted.

There is little need of restricting regular physical education activities except in extreme cases. Rather, most activities seem to be therapeutic. A perusal of the research seems to show that moderate physical activity may lessen the severity and the incidence of seizures. In extreme cases, the physician may exclude certain specific activities, such as highly competitive athletics, or may place limitations on others, such as a buddy system for swimming or supervised spotting in gymnastics.

Diabetes

Description: Diabetes mellitus is a metabolic condition caused by the lack of a pancreatic hormone called insulin. Insulin acts in the bloodstream to speed the transport of glucose across cell membranes into the cells for oxidation. A lack of insulin will cause a kind of cell "starvation" which produces the following progressive symptoms: uneasiness, apathy, increase in apetitite, thirst, excessive urination, vomiting, dizziness, and finally shock and coma. Medical treatment for this condition involves control of diet and, usually, daily injections of insulin. Oral medication to control diabetes is not effective in juvenile diabetics.

Identification: Screening is usually accomplished by a physician, but an aware physical educator may refer a child suspected of having diabetes. Only tests by the medical profession, such as blood sugar monitoring and urinalysis, can deterimine the actual existence of diabetes. However, the presence of the following conditions may arouse suspicion: slow to heal infections, fatigue, excessive hunger, itching, unusually dramatic change in visual acuity, boils, ulcers, gangrenous sores, frequent urination and excessive thirst.

Implications: The physical activity of a diabetic is usually not contraindicated; rather, it seems to be beneficial. Exercise tends to lower the blood sugar level and may initiate insulin shock. Therefore, a little extra sugar may be needed during or after exercise and the child should be encouraged to have some on hand. Furthermore, exercise, when used in conjunction with diet, may help alleviate obesity which is a common complicating factor associated with diabetes. Also, the social factors inherent in a physical education program affect the psychological health of the diabetic child.

A vigorous program within either a modified or regular curriculum is well suited for most diabetics. Excessive fatigue, however, should be avoided. Very highly competitive games should be of short duration. Social programming should be an important aspect of physical education for this type of child. The physical educator should observe diabetic children during and after strenuous exercise to detect signs or symptoms of insulin shock. Sugar should be taken as needed. But in essence, the physical education programming objectives are identical to those of the normal child.

Dysmenorrhea

Description: Dysmenorrhea is a condition of abdominal cramps during menstruation. It is common during the first day or two of menstruation. Some hypothesized causes may include immaturity of the internal reproductive organs, fatigue, poor posture and inadequate exercise.

Implications: Physical activity during dysmenorrhea is not at all contraindicated. As a matter of fact, a perusual of the research in this area would indicate that exercise is therapeutic. The medical profession generally recommends that exercise be continued throughout menstruation, though moderately reduced during the first two or three days of the period if a girl desires. There is, therefore, little reason to excuse girls from physical education due to this condition. Even swimming is an appropriate activity when tampons are used.

Well planned exercise programs should be undertaken which relate specifically to the condition. The purposes of such exercises are as follows: improvement of circulation; postural development, especially the remediation of lordosis; and the stretching of tight fascia and ligaments. The following exercises may be beneficial: Billing stretch, abdominal pumping, pelvic tilt and knee-chest low stretch. Consult the school's medical staff and the appropriate references for a more comprehensive treatment of these and other exercises germane to this condition.

Emotional Disturbance

Description: Emotional disturbance, or social and emotional maladjustment, is a behavioral condition with a multiplicity of behavioral manifestations. The behaviors observed in an emotionally disturbed child assume a varied spectrum of responses including poor work habits, class disruption, withdrawal, inability to follow directions, short attention span, lack of motor coordination, lack of redemptive peer interaction, lack of relationship with adults, depression, inconsistencies in response, and inability to delay gratification. All of the above response patterns, though varied, generally cause disruption in the area of human relationships and prevent maximum learning on the part of the disturbed child. There is no one single etiology for behavioral and emotional disorders. Reasons may be in the home or in the child's relationships in the community or school. The one certainty which exists is the complexity and the variability of the causes of emotional disturbance, and the difficulties in finding the proper focus for treatment.

More specifically, P.L. 94-142 defines "seriously emotionally disturbed" as a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree, which adversely affects a child's educational performance:

- an inability to learn which cannot be explained by intellectual, sensory, or health factors;
- inappropriate types of behavior or feelings under normal circumstances;
- an inability to build or maintain satisfactory interpersonal relationships with peers and teachers;
- a general pervasive mood of unhappiness or depression; or
- a tendency to develop physical symptoms or fears associated with personal or school problems.

The term includes children who are schizophrenic or autistic. The term does not include children who are socially maladjusted, unless it is determined that they are seriously emotionally disturbed.

Identification: Due to the extreme variability of behavior patterns an interdisciplinary effort of observation for screening purposes is required. Since the behavioral manifestations of emotional disturbances are extremely variable, they may occur in a multitude of unique settings. As a result, the screening process becomes not only the job of the school psychologist, but also of the classroom teacher, physical educator, guidance counselor and nurse. The screening process merely consists of observations of behavior in order to identify syndromes of behavioral maladjustments. The appearance of abnormal patterns of behaviors in any one child warrants referral to the school psychologist.

Implications: Since social and emotional maladjustment manifests as atypical behavior, the physical educator should approach it from a behavioral management viewpoint. In emotional disturbance, abnormal response patterns impede a child's learning as well as the development of social relationships. Behavioral management techniques are extremely useful in altering these habitual response patterns, thereby enabling the child to learn more and to develop more meaningful relationships. It therefore becomes the job of the physical educator to utilize behavioral management techniques for the purpose of enabling a child to fulfill his maximum educational and interpersonal potential.

The primary purpose of physical education for the socially and emotionally maladjusted is the development of social ability presently lacking in the individual. The educational problem of the emotionally disturbed child usually does not lie in

the inappropriateness of curriculum. Although the perceptual and motor aspects of the physical education curriculum are important to these children, they are not the primary purpose of the physical educator's efforts to improve the condition. Rather, physical education has a unique opportunity to provide a microsociety in which needed social abilities may be developed. For indeed, it is the social response patterns which are problematic for the socially and emotionally maladjusted child.

Hearing Impaired

Description: A hearing impairment may exist whenever a child does not receive adequate auditory input due to a perceptive or volume problem. This makes it difficult for the child to respond to the auditory instructions of the teacher. A child with an auditory problem may receive distorted sensory input or may not receive enough auditory sensory input for communication through that mode. Furthermore, as the primary communication mode between student and teacher is auditory, such a handicap could be quite severe from an educational standpoint.

Identification: Although there are a number of behavioral abnormalities which may arouse the suspicion of the physical educator, the precise extent and nature of hearing loss can only be determined by a hearing specialist through the use of an electric audiometer. Referral to a family physician or a specialist in etiology is suggested when a number of the following symptoms appear in a child: 1) indifference and lack of response to auditory commands, 2) response to noises rather than words, 3) monotonous and indistinct speech, 4) excessive vocal play, 5) preoccupation with vibratory sensation, 6) increased visual alertness and attentiveness, 7) highly imitative play, 8) misunderstandings in social situations, 9) heightened reaction to affection, and 10) tensions, tantrums and general frustration at not understanding what his class peers understand.

More specifically, P.L. 94-142 defines "hard of hearing" as a hearing impairment, whether permanent or fluctuating, which adversely affects a child's educational performance but which is not included in the definition of "deaf." "Deaf," according to the law, means a hearing impairment which is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification, which adversely affects educational performance.

Implications: Implications for physical education do not include alterations of the basic curriculum; rather the institution of prosthetic devices, stimuli and environments are of major importance. Prosthetic devices, such as a hearing aid, enable the child to receive auditory instructions just as his peers do. Prosthetic stimuli, such as printed instructions, handouts and reliance on demonstrations are merely substitutions of one type of stimulus (visual) for another which can't be received (auditory). Prosthetic environments are structured so that the hearing loss doesn't cause a true behavioral deficit. Games are used which require little or no auditory input for successful participation. Softball, as one example, is predominantly a visually-oriented activity and requires very little auditory input.

Impaired Physical Fitness

Description: An unfit individual is one who is unable to perform normal daily activities using muscular, metabolic, cardiovascular or organic functions. Poor muscular fitness due to lack of strength or flexibility may limit the kinds of skills an individual may utilize in daily life. Metabolic deficiencies, such as malnutrition due to obesity or underweight, may severely limit the stamina which enables an individual to maintain high productivity over a period of time. Cardiovascular deficiencies also cut down on daily endurance. Some children are "under-par" on a genetic basis, and these same children seem to be more susceptible to diseases, fatigue, accidental injuries and stressful situations.

Identification: The physical educator can screen for unfit individuals through the use of a fitness test battery. The battery used for screening should include items for many different fitness factors such as aerobic and anerobic power, trunk strength, shoulder girdle strength, flexibility and coordination. The physical educator should also note the presence of excessive obesity in his or her students.

Implications: An individualized, progressive program should be planned for physically unfit children based on the factorial results of the test battery. By comparison of the child's performances to established norms, specific deficient fitness factors will emerge. Program activities should be selected which help develop the deficient fitness factors. These activities should be arranged progressively and on an individualized basis in order to assure maximum remediation of the deficient factor.

Infectious Diseases

Description: There are many types of infectious diseases which, though temporary in nature, may require a program modification of some description. When under a physician's care, such condi-

tions as tuberculosis, pneumonia, streptococcal infections, encephalitis, infectious mononeucleosis, meningitis and influenza, have good prognoses. The subsequent program alterations are of a short term nature.

Identification: In cases of infectious disease, the physician is the sole diagnostician and his recommendations should be strictly followed. His recommendations as to the extent and nature of physical activity should serve as the basis of the program alteration.

Implications: A physical education program for children who have recovered from an infectious disease should, under a physician's guidance, provide for the gradual, progressive resumption of activity in order to bring the child's endurance and resistance to fatigue back to normal levels. An underlying in the resumption of activity, and one which has an important part in the program, is that of endurance. A convalescent child should not attempt to resume normal activities too quickly. The program must be as gradual as the physician recommends.

Joint and Muscle Disabilities: Acute

Description: Acute joint and muscle disabilities are an expected part of most sports and athletics and include a number of different types of injury in virtually any area of the body. Most commonly occurring in scholastic sports, such disabilities may happen in a multitude of everyday situations and usually involve some sort of trauma at a localized area. The types of disorders include sprains, strains, contusions dislocation and fractures; and specific disorders may be such things as muscle pulls, shin splints, and Osgood-Schlatter's disease. The injuries can occur in all major skeletal and muscular areas such as the shoulder and pelvic girdles, the arms and legs, the feet and ankles, elbows and wrists, and the spinal column.

Identification: Although an injured child may often be referred to a physical educator, the medical profession must serve as diagnostician in severe cases, and is ultimately responsbile for the treatment and rehabilitation. Many times the physical educator can grossly diagnose an injury and appropriately plan therapeutic treatment. However, in severe cases, a physician, athletic trainer, and/or physical therapist will be involved in the diagnosis and treatment. Although the medical profession is primarily responsible for the child's recuperation, rehabilitation is actually a cooperative venture between the physician, therapist, athletic trainer and physical educator.

Implications: Research and medical opinion lead us to believe that exercise actually decreases the recuperation time in joint and muscle disabilities. Progressive-resistance training of the affected areas would therefore, be an important aspect of the rehabilitative treatment of sprains and strains.

Inclusion of children recovering from muscle and skeletal injuries in sports skills is possible when the injured area is ranked in relation to its degree of involvement for each skill. When judging whether or not a child should take part in a particular sports skill activity, the affected joint or muscle should be ranked as either mildly, moderately or maximally involved in the specific sports skills required in the game. A comparison of the ranking with the severity of the injured part gives us a criterion for the inclusion or exclusion of the child in certain sports skill activities. If the injured part is *not* significantly involved in an activity, participation should be permitted and/or encouraged. Such an analysis has been made for a number of sports skills in *Principles and Methods of Adapted Physical Education*, Arhneim, Auxter and Crowe, 1977.

Learning Disabilities

Description: The term specific learning disability applies to that group of children whose achievement is markedly below their aptitude in a specific area of education. The multitude of areas in which difficulties may be encountered include the following: perception, motor, spoken language, reading, written language, arithmetic, and social. A description of each type of learning disability is outside the scope of these guidelines. However, it should be noted that when a child's achievement in a certain subject falls well below that which is expected, the consequences are often social or psychological. The physical educator must, therefore, be prepared to 1) prevent social and emotional adjustment, and 2) plan activities and interactions which will aid in the learning disabled child's social development.

More specifically P.L. 94-142 defines "specific learning disability" as a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, or of environmental, cultural, or economic disadvantage.

Identification: Screening for learning disabilities is a multidisciplinary task. Physical educators classically can screen for problems in the motor and perceptual areas. Regular classroom teachers can screen for specific problems in the academic areas. School psychologists also aid in determining problem areas by studying perception and by comparing achievement to general intelligence and adaptive behavior. A cooperative effort is required if the delivery of services to this type of child is to be adequate.

Implications: The major direction in physical education for the learning disabled child is twofold: 1) perceptual motor development and 2) social development. Many learning disabilities in academic areas are actually related to, or caused by, problems in underlying perceptual factors. The physical educator should assess which, if any, perceptual factors are deficient. Then two strategies could be employed: 1) plan perceptual motor activities which will remediate the specific problem, (planning balance activities for the remediation of laterality or directionality problems), or 2) discuss with classroom teachers alternate sensory modes which may be substituted for primary modes which are affected by the difficulty, (teaching dyslexic children through the auditory rather than the visual mode).

Social development should be programmed according to the model in the section concerning social development. Basically, the child is assessed as to which social traits should be developed; social games and activities then should be used which enhance or develop the needed social skill. The physical educator should reinforce positive social behaviors of the learning disabled child both as a preventive measure and in remediating social problems.

Leukemia

Description: Leukemia is a malignant disease of the blood which occurs relatively often in children and is usually ultimately fatal. The process usually involves the white blood cells (leukocytes) which multiply and crowd the red blood cells (erythrocytes) in the bone marrow. Medical science has been very successful in postponing fatality from this disease in children and there is some hope for permanent recovery in many cases at the present time.

Identification: The diagnosis, prognosis and subsequent treatment of leukemia is entirely a medical responsibility. Blood examinations are used for determining the exact diagnosis and severity of leukemia. The treatment which is prescribed for the child with leukemia often permits an almost normal lifestyle and also increases the longevity of what otherwise would be a very short lifespan.

Implications: The physician's recommendations as to the extent of activity modification must be followed. The extent of the disease may cause placement into the vigorous, moderate or mild categories of the modified programming. Such a placement would be based on the child's vitality and resistance to fatigue. The physician may also recommend omitting activities in which there is a high risk of injury to enlarged organs (spleen and liver). Prevention of secondary infections of the skin from superficial injuries becomes extremely important to a child with leukemia.

A major contribution which physical education may make to the child with leukemia is a social one. A child with leukemia, whether or not he knows he has the disease, may suffer socially if limited in his activities. Games and activities which involve social interaction and which develop social skills should be a major part of the physical education program.

Mental Retardation

Description: The American Association on Mental Deficiency (AAMD) contends that mental retardation consists of deficits in two areas: intellectual functioning and adaptive behavior. The deficits, appear during the developmental period (birth to age eighteen), and cause problems in behavioral competencies which make self-fulfilling contributions to society quite difficult.

The AAMD breaks down measured intelligence into four categories: Mild, Moderate, Severe and Profound. The mildly retarded (IQ 55-69) are roughly equivalent to the "educable" classification as used historically in public schools. They are retarded mainly in their rate of academic learning and are relatively near the norm as far as motor development is concerned. The moderately retarded (IQ 40-54) are roughly equivalent to the "trainable" group, and are retarded in the academic, motor and self-help areas. The severely (IQ 25-39) and profoundly (IQ 0-24) are retarded to the point of predominant dependence upon caretakers for their survival.

P.L. 94-142 defines "mentally retarded" as significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior and manifested during the developmental period, which adversely affects a child's educational performance.

Identification: Educators today realize that screening for mental retardation is a more com-

plex task than merely obsserving significant deviations on an intelligence test. Historically, a significant number of standard deviations below the mean (usually two) determined whether a child was labeled retarded or normal. However, screening today should include performance on an adaptive behavior scale and other psychological tests and observations in addition to an IQ score. This is because the concept of retardation has become more complex, meaning not only intellectual deficits, but also the inability to function adequately in certain environments.

Implications: The purposes of physical education for the mildly retarded child are identical with those of the regular program; only the teaching strategy must be altered. Regular physical education seeks to develop motor skills, sports skills, leisure time activities and social abilities. The mildly retarded child requires all these areas of development and would, therefore, profit from the regular curriculum. However, learning principles such as low verbal input, increased participation time and increased feedback should be used. Clear, progressive and sequential activities aid in this child's ability to conceptualize the tasks.

Purposes of physical education for the moderately retarded child differ both in curriculum and in teaching strategy. The moderately retarded child needs to develop self-help skills and social abilities, in addition to gross motor skills, in order to achieve a more independent lifestyle. Physical education can help by emphasizing social development and fine motor activities while not neglecting gross motor development. Strict adherence to the principles of learning (see behavioral management section) is extremely important for these children. They need very clear tasks and clear feedback concerning their performance. Furthermore, success should be programmed into the activities and new tasks should be presented if a child fails two or three times consecutively.

Physical education for the severely and profoundly retarded should center primarily on training basic gross motor skills and other sensory-motor abilities. The development of efficient movement patterns is especially important, and behavior modification is a necessity as a programming aid.

Orthopedic and Neurologic Disorders

Description: Orthopedically and neurologically handicapped children are not able to use all their body parts in order to function effectively due to amputation or other musculoskeletal or neuromuscular disease. Since our environment has been structured for people who have functional use of their extremities, it is obvious that these persons are at a definite disadvantage. Conditions which may handicap one or more areas of the body include such things as cerebral palsy, muscular dystrophy, spina bifida, myelomeningeocele, spinal tramas, etc. All of these conditions affect the ability of the individual to do things taken for granted by normal persons, such as ambulatory tasks.

More specifically, P.L. 94-142 defines "orthopedically impaired" as a severe orthopedic impairment which adversely affects a child's educational performance. The term includes impairments caused by congenital anomaly (clubfoot, absence of some member, etc.), impairments caused by disease (poliomyelitis, bone tuberculosis, etc.) and impairments from other causes (cerebral palsy, amputations, and fractures or burns which cause contractures).

Identification: Medical personnel, particularly orthopedists and neurologists, are the most qualified to delineate limitations and recommend activities. These specialists will thoroughly understand the individual handicap of a particular child, and will know the implications of the handicap in everyday living.

Implications: Physical education can provide a very meaningful social function for the orthopedically and neurologically handicapped child. A disability of this type, particularly if acquired after a concept of normalcy has been established, may precipitate abnormal social or emotional behavior patterns. Physical education can utilize social games and activities to construct situations where children learn to interact and accept themselves and the individual differences of others.

The use of prosthetic devices may be necessary to allow the child to function as normally as possible within an average environment. Prosthetic devices are such aids as wheelchairs, braces, walkers, and crutches. They enable the handicapped person to perform basic activities, such as ambulate, which are required in normal environments and otherwise would be impossible for the child. Physical education, in conjunction with physical therapy, can provide exercises which enable more efficient use of the devices. Furthermore, the physical educator may design special devices for particular use in a physical education setting. For example, flotation devices in swimming pools are actually prosthetic devices designed to achieve normalcy in an aquatic environment.

Physical education should also utilize the concept of prosthetic environments in order to equalize the participation of heterogeneous groups. A designer of prosthetic environments is

one who believes that when a child does not have the ability to function equitably in a particular environment, the environment should be changed to suit his abilities. Handrails on school walls and wheelchair ramps outside buildings are examples of environmental changes which accommodate the abilities of the physically handicapped. The physical educator can utilize environmental changes in the physical education class. For example, special game rules may be made which equalize wheelchair-bound children with ambulatory children, such as having all children on scooter boards for indoor soccer. Activities should be selected according to the following questions: 1) Can the child do the activity without altering anything? 2) If not, is there a prosthetic device which could be used to enable equitable participation? 3) Is there any way we could alter the environment (facilities, rules, etc.) which would allow equitable participation?

Post Operative Conditions

Description: There are a number of surgical operations affecting children which require a recuperative and/or a remedial period following surgery. The types of surgery which may be performed on school age children will include tonsillectomy, herniorrhaphy, appendectomy, menisectomy or other knee surgery, muscle transplants, neuro-surgery and heart surgery. Some of these operations require a period of extensive rehabilitation through exercise. All operations require a period of decreased activity following the surgery.

Identification: The child's physician or specialist is responsible for the recuperation and remediation in post-operative patients and necessary suggestions should be followed. The physician obviously knows the individual conditions most comprehensively and would have the best understanding of the effect the condition will have upon the lifestyle of the child. Furthermore, the physician is legally responsible for the prescription of post operative activities or limitations. He should communicate these prescriptions to the physical educator. Such recommendations are therefore the basis of program planning in physical education of post-operative children.

Implications: Physical education for post operative children should ordinarily take the form of gradual, progressive resumption of activity. As in the case of low fitness, gradual progressive exercise enables the individual to maintain a certain fitness level of the remainder of the body which generally expedites the recuperative interval.

The physical educator may be involved in the rehabilitation of a post operative condition under the direction of a physician. Specific remedial exercises for post-operative conditions should be prescribed by the physician and implemented by the physical educator. It should, however, be reiterated that such a program is prescribed by a physician.

Postural Deviations

Description: Good standing posture exists when all body segments are aligned in a vertical manner when viewed frontally and laterally so that the maximum mechanical efficiency of the skeletal structure exists. When the body segments are naturally balanced one over the other in vertical relationship, there is very little energy cost and a great deal of stability. When viewed frontally, the body should appear symmetrically proportioned about the midline. This relationship should be seen when viewed either from the anterior or posterior. When viewed laterally, a plumb line should pass through the ear lobe, the acromion, the greater trochanter, just anterior to the patella and through the lateral malleolus.

Identification: The physical educator can screen for postural deviations by using the screening procedure included in this manual in conjunction with the sources of information on posture. The screening format is designed so the physical educator can identify antero-posterior and lateral deviations. Further consultation with the sources included at the completion of this section will enable even more precise evaluation and prescription of activities.

Implications: There are a multitude of causes and effects of poor posture in children. Furthermore, some effects may even complicate the problem and therefore propagate a vicious circle of cause and effect. Some causes of poor posture include poor health habits, lack of physical activity and emotional problems. Some effects of poor posture may include poor self image, fatigue, inefficient organic function and lack of peer respect due to a lackadaisical appearance.

Regular, vigorous physical activity is an excellent preventive measure for posture problems. Vigorous physical activity tends to proportionally develop the critical anti-gravity muscle groups, thereby preventing the progression of posture problems.

Posture deviations may either be structural or functional, and the treatment of the two are not the same. Structural deviations generally involve skeletal abnormalities. Functional deviations involve inappropriate development of the antigravity muscle groups. The treatment for both kinds of

deviations is usually undertaken by an orthopedist. The physical educator should cooperate in the treatment for most functional disorders.

Remediation of functional posture deviations involves strengthening weak or stretched muscle groups and stretching tight muscle groups. Muscle groups which are especially tight or weak tend to cause malalignments of the ideal skeletal structure. It is the job of the physical educator to provide activities which will strengthen weak muscle groups and stretch tight muscle groups in order to realign the skeletal segments.

The physical educator should be alerted to the following postural deviations:

- Lordosis: exaggerated hyperextension of the lumbar spine, due to weak abdominals, tight hip flexors and tight erector spinae in the lumbar region.
- Flat back: lack of hyperextension of the lumbar region and tight hamstrings.
- Kyphosis: exaggerated flexion of thoracic spine. Tight pectoralis and weak erector spinae in thoracic region.
- Kypholordosis: combination of kyphosis and lordosis. One usually occurs as a compensation for the other.
- Round shoulders, winged scapula: tight pectoralis, weak adductors of the scapula. (Could also be caused by paralysis of the long thoracic nerve).
- Forward head: lack of cervical hyperextension. Weak erector spinae in cervical region.
- Functional and Idiopathic Scoliosis: rotolateral spinal asymmetry. Asymmetrical development of the trunk musculature. All cases of scoliosis should be assessed by an orthopedist before programming.

Scoliosis may be present from birth, due to malformation of the vertebrae, or may be the functional type which occurs during adolescence, mainly in girls. Detection of functional scoliosis by teachers, especially in physical education is extremely important in establishing a definite diagnosis and treatment.

- Functional bowlegs: hyperextension of the knee and inward rotation of the leg. Lack of tonus in hamstrings.
- Tibial Torsion: inward rotation of the tibia ("pigeon-toes"). Tight inward rotators of the leg, weak outward rotators.
- Knock Knees: weak outward rotators, stretched medial ligaments.

Pulmonary Disorders

Description: Pulmonary disorders include asthma, allergies, and other upper and lower respiratory illnesses. Allergies are hypersensitive reactions of certain individuals to specific foreign substances which are harmless to most others. There are many types of allergies caused by many kinds of substances. However, we will mainly concern ourselves with those that affect the respiratory system such as asthma and hay fever. Asthma is a respiratory allergy in which blockage of the bronchial tubes or lungs occurs due to excess mucous secretions, bronchial spasm and swelling of bronchial tissues. Exercise-induced asthma, though not an allergy as such, also is characterized by bronchial spasms and may occur during or shortly after extreme exercise. The blockage will decrease the ability of the patient to expire air, and can be quite serious if the oxygen-carbon dioxide exchange is insufficient for metabolic needs. All respiratory allergies, to a greater or lesser extent, decrease the child's ability to withstand fatigue.

Identification: Children are identified as asthmatic or allergic by the medical profession and such information should be included on the medical form. The restrictions imposed by the physician vary from child to child as each case is unique. Physician recommendations, therefore, play a very important part in planning for physical education.

Implications: Activities which are appropriate for the moderate category usually are suitable for the allergic child. However, each case must be handled individually. Perceptual motor training for the elementary child is important, as is relaxation training and leisure education for the elementary and secondary child. Participation in social games is important in order to develop peer relationships which would not be developed with a child who is excluded from physical education.

In addition to the above activities, there may be an especially important remedial element to the physical education of children with asthma and other severe allergies. The development of physical fitness, within a child's capacity to withstand fatigue, has therapeutic value in that it increases maximum lung capacity, making normal breathing easier thereby preventing attacks. The physical educator, however, must be cautious so that overly vigorous activity does not precipitate attacks. Also, exercises which teach correct diaphragmatic breathing are also important from a remedial standpoint.

Visually Impaired

Description: There are a number of visual problems which may range from almost no handicap to total blindness. Any one of the following anomalies may account for vision defects: 1) refractive problems such as myopia and hyperopia, 2) structural problems such as cataracts and

glaucoma, 3) infectious diseases, 4) muscular problems such as strabismus, and 5) congenital blindness and neurological problems.

"Visually handicapped," as defined by P.L. 94-142 is a visual impairment which, even with correction, adversely affects a child's educational performance. The term includes both partially seeing and blind children.

Identification: The definitive diagnosis of visual problems should be accomplished by specialists in abnormalities of the eyes. The ophthalmologist is a physician who specializes in the treatment of eye disease and defects through drugs, surgery, or prescription of corrective lenses. The optometrist is a non-medical specialist licensed to prescribe lenses for the correction of refractive problems. Depending on the apparent problem, a thorough evaluation by one of these specialists is important for the visually impaired youngster.

Implications: One major method of dealing with the visually impaired involves the prescription of a prosthetic device whenever possible. In this case, a prosthetic device would allow an individual to function normally with impaired vision. Glasses and contact lenses are the common prosthetic devices utilized for refractive problems. Infections, muscular imbalance (crossed eyes or the child who covers one eye in order to see well), pain in the eyes, sudden impairment of vision, require prompt medical attention.

It is very important for the severely visually impaired to be provided with a great deal of movement experience in spite of the handicap in order to stimulate development. Since the blind child lacks a sensory channel by which he learns about the environment and about himself, his development may be somewhat slow. The only way the child can compensate for visual inadequacy is by tactile, auditory and kinesthetic experience through movement. Although the blind child may be afraid to move due to lack of vision, he should be taught to move in spite of the handicap in order to maintain development. The blind must learn to substitute intact sensory channels for inadequate ones.

The design of prosthetic stimuli and prosthetic environments constitutes the types of adaptations in the physical education program. Prosthetic stimuli in physical education would include such things as sound devices on the baskets in basketball and physically assisting blind baserunners in baseball. These methods substitute one sensory channel for an inadequate one. Prosthetic environments would include changing some game rules to slow down the pace or adding structures in a swimming pool to guide the blind child (ropes or bouys). The physical educator can quite easily conceive such alterations and design them according to the activity and need.

Other Handicapping Conditions As Defined by P.L. 94-142

There are several conditions covered in P.L. 94-142 which have not been directly addressed in the previous section. They are "deaf-blind," "multi-handicapped," "other health impaired," and "speech impaired."

"Deaf-blind" means concomitant hearing and visual impairments, the combination of which causes such severe communication and other developmental and educational problems that they cannot be accommodated in special education programs solely for deaf or blind children.

"Other health impaired" means limited strength, vitality or alertness, due to chronic or acute health problems such as a heart condition, tuberculosis, rheumatic fever, nephritis, asthma, sickle cell anemia, hemophilia, epilepsy, lead poisoning, leukemia, or diabetes, which adversely affects a child's educational performance.

"Multihandicapped" means concomitant impairments (such as mentally retarded-blind, mentally retarded-orthopedically impaired, etc.), the combination of which causes such severe educational problems that they cannot be accommodated in special education programs solely for one of the impairments. The term does not include deaf-blind children.

"Speech impaired" means a communication disorder, such as stuttering, impaired articulation, a language impairment, which adversely affects a child's educational performance.

Resources from Public Service Organizations

Cardiac Problems

The following materials are available from the Ohio Affiliate of the American Heart Association, 10 E. Town St., Columbus, Ohio 43215. They are free in single copies.

- The Functional and Therapeutic Classifications of Patients With Diseases of the Heart — 84-002-A
- Innocent Heart Murmurs in Children — 51-014-A
- You, Your Child and Rheumatic Fever — 50-208-A
- A Guide for Teachers — Children with Heart Disease — 50-004-A
- If Your Child Has a Congenital Heart Defect — 50-014-A
- Living With Your Pacemaker — 50-016-A
- Prevention: Rheumatic Feber — 71-006-B
- Recreational and Occupational Recommenda-

tions for Use by Physicians Counseling Young Patients With Heart disease — 71-008-A

Convulsive Disorders

The following materials are available from the Epilepsy Association of Ohio, Suite 204, 5310 East Main Street, Columbus, Ohio 43213. The pamphlets are free in single copies. This organization also publishes a list of films which it lends at no cost to groups within Ohio.

Are You As Well Informed As You Think?
Answers to Questions
Because You Are My Friend (English)
Books on the Epilepsies
Can Epilepsy Be Prevented?
Employer's Role
Epilepsy: Hope Through Research
Epilepsy School Alert
Facts and Figures on the Epilepsies
Medical and Social Management
Pharmacopoeia of the Epilepsies
Recognition and First Aid
Research Into the Epilepsies
Role of the Nurse
Respond to Workers with Epilepsy
Teacher Tips
Teacher's Role
Worldwide Cooperation
Epilepsy and Insurance

School Alert Kits

The following pamphlets are available at no charge for single copies from the Ohio Society for Crippled Children and Adults, 5 North Broadleight, Columbus, Ohio 43209.

Parents Should Know: Epilepsy Series #1
Teachers Should Know: Epilepsy Series #2
Nurses Should Know: Epilepsy Series #3
Teen-agers Should Know: Epilepsy Series #4

Mental Retardation

The following pamphlets are available at no charge from The Ohio Association for Retarded Citizens, 8 East Long Street, 9th Floor, Columbus, Ohio 43215.

Publications List
Retarded Citizens Need Recreation Too
The Fullest Life: Innovation in Recreational Programming for Mentally Retarded Citizens

Available from AIM, Inc., 945 Danbury Road, Dayton, Ohio 45420 at a modest charge, is their handbook:

Adventures in Movement for Handicapped Kids

Musculoskeletal and Neuromuscular Disorders

The Ohio Society for Crippled Children and Adults, 5 North Broadleight, Columbus, Ohio 43209, distributes an extensive publications catalog.

Pulmonary Problems

The Ohio Lung Association, 850 Michigan Avenue, Columbus, Ohio 43215, publishes a catalog of materials on lung diseases. The catalog lists books, pamphlets and posters which are distributed in single copies as a public service. Among them are the following:

Asthma (pamphlet)
What Everyone Should Know About Asthma (booklet)
Willie and the Wheeze (booklet)
The Strange Case of the White Rabbit: A Teacher's Guide to Asthma in Children (booklet)
Breathing: What You Need to Know (book)
What You Can Do About Your Breathing (booklet)
Your Lungs (pamphlet)
Chronic Bronchitis (pamphlet)
Chronic Cough (pamphlet)
Cigarette Smoking (pamphlet)
Dust Diseases (pamphlet)
Flu (pamphlet)
Histo (pamphlet)
Hay Fever (pamphlet)
TB Outside the Lungs (pamphlet)
Get Ready (pamphlet)
What Everyone Should Know About Emphysema (booklet)
Don't You Dare Breathe That Air (booklet)

References for Categorical Problem Chart

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RESOURCE CHART FOR CATEGORICAL PROBLEMS

Category Problem	Resource and Page						
	Arnheim	Daniels	Fait	Lowman	Raney	Sherrill	Wells
Anemia	162-4	237-8	201-203				
Abdominal Ptosis	208,236,259			41,141,201 117-22			56-62
Amputations	268-71	149-65	116-122		275-88	278,376 383-5,454	
Arthritis	271-3	172			130-66	433-439	
Asthma and Allergies	300-2	239	117-179	205-210		349-368	
Bowlegs	212-3 223-4			39-40,138 239-40	373-4	111-112	46
Cerebral Palsy	311-8	112-27	124-133		169	405-19	
Congenital Deformities	269	163-7	113	39-44 166-7	17-54	375-6	
Diabetes	396-9	192-4	198-199			453-7	
Emotional Disturbance	377-92		255			489-500	
Epilepsy	320-5	127-31	199-201			398-402	
Flat Back	208,235		378-379	116		16-23	
Foot Abduction	200-6		369-370	39,174		114-9	44
Foot Adduction	200-6		369-370	234-5		114-9	44
Foot Pronation	200-6		369-370	42,72,114-5 130-2		114-9	46-7
Forward Head	210		375-376	139-40,107 221-2		85	63-73
Gait Analysis	12					126,131,132 325,370,385	47 83-4
Hearing Impaired	340-46		155-57			310-331	
Heart	290-6	176-92	169-171	203		441-50	
Hip Disorders	273-7					107,110 372,376	
Hyperextended Knee	250			122,141 237		110,111	
Kypholordosis	209 122-3	72,84-6		113,141			
Kyphosis	208-9	71-72 84-6	363	110-13 141	303-6	87	24-8
Lateral Head Tilt				124		86	
Learning Disability	17		236-41			296-308	
Lordosis	207-8	72,86-7	377-78	113-6	307	89	49-55
Mental-Retardation	352-76	98-111	214-234	95		459-83	
Musculoskeletal: Acute	241-67						
Overweight	156-62	241-3		70,94,95		391-5	
Pes Cavus	201,202 204			139		114-9	46-8
Pes Planus	201,202 204			132	383	114-9	46-8
Round Shoulders	209	72	366	108-10 171	303-6	99	63-73
Scoliosis	214-217 234	73,168	379-381	227-9 127,223	293-303	93-94	
Torticollis	281-2 257	116		124	401-4	86	
Underweight	155-6	243-4		92-3 68-70			
Visually Impaired	330-1		144-155			330-48	

National Organizations and Groups Serving The Handicapped

Administration of Aging
330 C Street, S.W.
Washington, D.C. 20201

Alexander Graham Bell Association
for the Deaf, Inc.
1537 30th Street, N.W.
Washington, D.C. 20007

American Academy for Cerebral Palsy
University Hospital School
Iowa City, Iowa 52240

American Alliance for Health,
Physical Education, Recreation and Dance
1201 16th Street, N.W.
Washington, D.C. 20036

American Art Therapy Association
6010 Broad Branch Road, N.W.
Washington, D.C. 20015

American Association for the Deaf
P. O. Box 105
Talladega, Alabama 35160

American Association on Mental Deficiency
5201 Connecticut Avenue, N.W.
Washington, D.C. 20016

American Blind Bowling Association
P.O. Box 306
Louisvile, KY 40201

American Camping Association
Bradford Woods
Martinsville, IN 46151

American Cancer Society, Inc.,
219 East 42nd Street
New York, NY 10017

American Diabetes Association
18 East 48th Street
New York, NY 10017

American Foundation for the Blind
15 W. 16th Street
New York, NY 10011

American Heart Association
44 East 23rd Street
New York, NY 10010

American Junior Blind Bowling Association
4244 Heather Road
Long Beach, Caifornia, 90808

American Legion
National Child Welfare Division
P.O. Box 1055
Indianapolis, IN 42206

American Medical Association
535 North Dearborn Street
Chicago, IL 60610

American National Red Cross
17th and D Street, NW
Washington, D.C. 20000

American Occupational Therapy Association, Inc.
251 Park Avenue, South
New York, N.Y. 10010

American Physical Therapy Association
1156 15th Street, N.W.
Washington, D.C. 20005

American Psychiatric Association
1700 18th Street, N.W.
Washington, D.C. 20009

American Public Health Association, Inc.
1015 18th Street, NW
Washington, D.C. 20036

American Wheelchair Bowling Association
Route 2, Box 750
Lutz, FL 33549

Arthritis Foundation
1212 Avenue of the Americas
New York, NY 10036

Arthritis and Rheumatism Foundation
10 Columbus Circle
New York, NY 10019

Association for the Aid of Cripple Children
345 East 46th Street
New York, NY 10017

Bureau of Education for the Handicapped
U.S. Office of Eduction
400 Maryland Avenue, S.W.
Washington, D.C. 20202

Children's Bureau
Office of Child Development
300 Independence Avenue, S.W.
Washington, D.C. 20201

The Council for Exceptional Children
1920 Association Drive
Reston, Virginia 22091

Epilepsy Foundation of America
733 15th Street, N.W.
Washington, D.C. 20005

Goodwill Industries of America, Inc.,
9200 Wisconsin Avenue
Washington, D.C. 20014

ICD Rehabilitation and Research Center
340 East 24th Street
New York, NY 10010

International Council for Exception Children
1201 16th Street, N.W.
Washington, D.C. 20006

International Society for
Rehabilitation of the Disabled
219 E. 44th Street
New York, NY 10017

Joseph P. Kennedy, Jr. Foundation
719 13th Street, N.W.
Washington, D.C. 20005

Muscular Dystrophy Association of America, Inc.
1790 Broadway
New York, NY 10019

National Amputation Foundation(Golf)
12-45 150th street
Whitestone, NY 11357

National Amputee Skiing Association
3738 Walnut Avenue
Carmichael, California 95608

National Association of the Deaf
1575 Redwood Avenue
Akron, OH 44301

National Association for Mental Health
10 Columbus Circle, Suite 1300
New York, NY 10019

National Association for Music Therapy
P.O. Box 610
Lawrence, KS 66044

National Association for Retarded Children
(NARC)
2709 Avenue E
Arlington, TX 76010

National Council on the Aging
375 Park Avenue, S
New York, NY 10010

National Cystic Fibrosis Research Foundation
521 5th Avenue
New York, NY 10017

National Easter Seal Society for
Criple Children and Adults
2023 West Ogden Avenue
Chicago, IL 60612

National Education Association
1201 16th Street, NW,
Washington, D.C. 20036

National Epilepsy League
203 North Wabash Avenue
Chicago, IL 60601

National Foundation for Asthmatic Children
5601 W. Trails End Road
P.O. Box 5114
Tuscon, AZ 85703

National Foundation for Neuromuscular Diseases
250 West 57th Street
New York, NY 10019

National Foundation—March of Dimes
1275 Momaroneck Avenue
White Plains, NY 10695

National Hemophilia Foundation
24 W. 39th Street
New York, NY 10018

National Institute of Health
9000 Rockville Pike
Bethesda, MD 20010

National Kidney Disease Foundation
342 Madison Aenue
New York, NY 10010

National Multiple Sclerosis society
257 Park Avenue, S.
New York, NY 10010

National Paraplegia Foundation
333 N Michigan Avenue
Chicago, IL 60601

National Recreation and Park
Association Branches:
American Park and Recreation Society
National Therapeutic Recreation Society
Society of Park and Recreation Educators
1601 N. Kent Street
Arlington, VA 22209

National Rehabilitation Association
1522 K Street, NW,
Washington, D.C. 20005

National Therapeutic Recreation Society
1700 Pennsylvania Avenue, NW
Washington, D.C. 20006

National Track and Field Committee
for the Visually Impaired
4244 Heather Road
Long Beach, CA 90808

National Tuberculosis Association
1790 Broadway
New York, NY 10019

National Wheelchair Basketball Association
Rehabilitation-Education Center
Oak St. and Stadium Drive
University of Illinois
Champaign-Urbana, Il 61820

National Wheelchair Athletic Association
40-24 62nd Street
Woodside, NY 11377

President's Committee on Mental Retardation
U.S. Department of Health, Education and Welfare
Washington, D.C. 20201

Rehabilitation Services Administration
(Social and Rehabilitation Service)
330 C Street, SW
Washington, D.C. 20201

Special Olympics, Inc.
1701 K Street, N.W.
Washington, D.C. 20006

United Cerebral Palsy Association, Inc.
66 East 34th Street
New York, NY 10016

United States Office of Education
Department of Health, Education, and Welfare
7th and D Streets, S.W.
Washington, D.C. 20202

Veterans Administration Central Office
Washington, D.C. 20420

CHAPTER SIX

OVERVIEW OF BEHAVIOR MANAGEMENT AND TEACHING STYLES

Purposes of Behavior Management

The major underlying thesis behind the use of behavior management is the structuring of environmental events according to pupil learning characteristics in order to aid the student in the learning process. The techniques generally focus on the consequences of the child's behavior and utilize the individual's own motivational level in maximizing learning. These behavioral management techniques are very helpful in teaching the retarded and practically essential for behavior and disordered children. It should be noted that all of the principles of behavior management are utilized with all people at one time or another. An effort should therefore be made to apply these principles to the best advantage in all physical education classes.[1]

Behavior management works by structuring a learning environment in such a manner that the consequences of behavior are contingent upon the behavior. The following principles are an outgrowth of effective conditioning principles. These techniques have their greatest application to socially and emotionally maladjusted children. Socially and emotionally maladjusted children have a difficult time ordering their behavior in compliance with the normal social structure. Behavior management serves to aid the child in organizing his personality so that adequate social relationships can be developed.

A Learning Model

All tasks which children learn may be viewed in three parts, namely pre-task, task, and post-task components. The pre-task components involve all that precedes the child's behavioral responses, such as the stimuli (task signals), and all environmental events which set the stage for the behavior. The purpose of the pre-task component is to focus the child's attention on the task and to clearly communicate what he or she is to do.

Task components are merely the child's response. Finally, the post-task components have to do with the use of consequences of behavior for the purpose of increasing or decreasing the rate of behavior. The majority of this section refers to reinforcement, a type of behavior consequence. This model merely provides a convenient structure which will aid in the understanding of how behavior management is related to the learning of a task.

The Concept of Reinforcement

Reinforcement is defined as an event which immediately follows a response and increases the response rate. Reinforcement maximizes learning by using what a child values as motivation for participation in a learning situation. Positive reinforcement is the presentation of a consequential event which increases the response rate. Giving the child tokens or praise is positive reinforcement. Negative reinforcement is the removal of an event which increases the response rate. Removing restrictions after a child completes a task is a negative reinforcer.

Using Play As A Reinforcer

At younger developmental levels, many children enjoy manipulating toys or playing games. Play, for this type of child, can be used as a reinforcer. Play as a reinforcer may be administered by allowing the child a short amount of play time (for example, one minute) after a specified amount of purposeful activity (for example, three minutes). Play makes the learning environment very enjoyable. Also, play at early developmental ages is purposeful in itself. A major disadvantage of the use of play, as compared with other reinforcers, is that it takes time away from other instruction and is not as easy to administer as praise or tokens.

Tokens As Reinforcers

A token can be any article which by itself has no reinforcing value. It can, however, be reimbursed for something the child values. Paper clips, poker chips, points, and novel pieces of paper have all served as tokens. Tokens can be used with children who can delay their gratification long enough to wait for their "pay off," the time when they cash in their tokens for something they value. A schedule of exchange (menu) must be developed which specifies how many tokens are required to purchase items of value. Items of value depend upon the children's choice. Such things as a food treat, choosing a particular activity, and privileges may serve as pay offs. The great advantage of the use of tokens is that the learning process is not interrupted in order to administer the reinforcer. The child doesn't receive the primary reinforcer until later.

Principles of Learning

The systematic application of the following learning principles will greatly enhance learning and the child's enjoyment:

- Be clear: tasks which are stated behaviorally or which are modeled by the instructor should be clearly stated, enabling the child to understand them.
- Be honest: always follow through with the reinforcers that have been promised.
- Be fair: the amount of reinforcement should be proportional to the amount of success. Small success yields small reinforcers while significant success yields significant reinforcers.

- Reinforce immediately: reinforcers must be associated with recent behavior in order to be effective.
- Reinforce after, not before: make sure the child completes the task before being reinforced. If reinforcement occurs prior to completion, the child may stop the activity prematurely.
- Reinforce small approximations: the child should be reinforced when he improves, or comes closer to, the desired response.
- Reinforce frequently with small reinforcers: keep the goals small so the child can be reinforced as often as possible for each improvement.
- Reinforce correct behavior: reinforce the child's completion of a learning objective, not behavior which is naturally expected of all children, such as obedience (unless that is the objective).
- Be systematic: all teachers apply these principles with their classes. However, most do so haphazardly and without knowing exactly what they are doing. Systematic application of the above principles will enhance learning. Haphazard application will not enhance learning, and may even impede learning.

Premack's Principle

Premack's principle maintains that following a less desirable activity with a more enjoyable activity results in more participation in the less enjoyable activity. Imagine, for example, that a swimming student likes to play with a ball in the water. The student doesn't however, enjoy participating in floating, which is necessary in order to learn to swim. An instructor who allows the child to play with the ball for one minute after having floated for two minutes, is using Premack's principle. It may be applied to programming by listing all the activities which are scheduled during a particular class period. Activities are then ranked on a continuum based on the activity which is enjoyed the most to the activity enjoyed the least. The order of class activities is then determined by placing a more enjoyable activity after a less desirable one.

Rank order of activity enjoyment		Order of activity for class
Enjoyable	1	8
	2	1
	3	7
	4	2
	5	6
	6	3
Least	7	5
enjoyable	8	4

Criticism Trap

When teachers use criticism as the primary method of controlling student behavior, they often fall into a criticism trap. This is especially true with children who receive adult attention only when being criticized. In such cases, the very behavior which the teacher criticizes actually increases in rate.

In order to avoid or escape the criticism trap, it is necessary for the teacher to praise students more and criticize less. There are several things which can be done to accomplish this: 1) make the misbehavior of one child the cue to praise another child who is behaving correctly; 2) put up signs reminding the teacher to praise more; 3) practice by counting how many times in one minute the teacher can praise; 4) prompt children to attempt activities which deserve praise.

It should be noted that criticism can be useful as a form of punishment. However, punishment is only successful in the context of much positive reinforcement.

Perspective on Teaching Styles

Physical education may be taught in a number of styles, such as command, task, recriprocal, individual program, guided discovery, and problem solving.[2] At a glance, it may seem that behavior management is best applied to the command. However, principles of reinforcement can, and should, be applied to all styles. A shift in style parallels a shift in decision making, and consequently a shift in the type of child behavior which should be reinforced.

Command: This style is a teacher directed method. The student is reinforced for doing what he is told to do.

Task: In this style, the teacher writes a task. The student must interpret the task and choose a way to accomplish it. Reinforcement occurs when the child 1) correctly interprets a task, and 2) completes the task according to criterion.

Reciprocal: The reciprocal style is similar to the task method with one exception; the peers monitor the task and record the results. The reinforcement is therefore most often social.

Individual programs: In this style a child interacts with a sequential series of activities which lead to a terminal objective. The child may be reinforced for progress through the sequence.

Guided Discovery: In this style, the teacher organizes relevant stimuli so the students are more apt to discover something without being specifically told or shown. Usually, the teacher asks leading questions to stimulate thinking. The students attempt to answer the questions themselves until they begin to arrive at the solu-

tion which the teacher has in mind. The child should be reinforced for approximations of the unstated terminal objective.

Problem Solving: The teacher presents a problem and the students may use any method of solving it. Reinforcement is contingent upon the solution, regardless of the method of arriving at the solution.

It is clear that physical education for all areas of exceptionality may be taught through a number of different styles. However, the systematic application of behavior management techniques, highly related to the child's learning characteristics and developmental level, will greatly enhance learning regardless of the teaching style.

[1] For more extensive treatment of behavior modification techniques, the reader should consult Mayer, C. R. and Sulzer-Azaroff, B. *Applying Behavior-Analysis Procedures with Children and Yough*, New York: Holt, Rinchart, and Winston, 1977 and Presbie, R. J. and Brown, P.L. *Physical Education-The Behavior Modification Approach*, Washington D.C.: National Education Association, 1977.

[2] For an in-depth analysis of the stypes of teaching, the reader should consult the following: Muska Mosston, *Teaching Physical Education*, Columbus: Merrill, 196)

APPENDIX

Sample Letters From School To Physician
Sample Referral Forms From Physician To School
Sample Letter To Parents From School
Selected Bibliography

SAMPLE LETTER FROM SCHOOL TO PHYSICIAN

Dear Doctor:

Enclosed you will find an explanation of the Adapted Physical Education Program at Tefft Junior High School. We hope you do not mind taking a few minutes out of your busy schedule to read this material. The reason you have received this information is because one (or more) of the following participants is/are your patient(s) and their parent(s) have granted permission to contact you for advice:

In order for this program to be meaningful and individualized we need your help in learning about the child's exact physical limitations in order to develop the most appropriate physical education program for him/her.

A participation form is enclosed for your convenience and should be completed for each child listed above. Your response to the form will be used to plan physical education experiences within the functional capacity of the child.

If you would like to talk to me concerning this student's problems and answer any questions you may have about my qualifications and/or about this program, feel free to call me or indicate such on the enclosed form.

Thank you for your time and cooperation. Your comments, questions, criticism will be greatly appreciated.

Respectfully,

Paul Smith
Adapted Physical Education
Coordinator

SAMPLE LETTER FROM SCHOOL TO PHYSICIAN

..... , 19..

Dear Doctor:

In the course of a routine motor and physical screening, it was noted that your patient, ... , a pupil at the .....School, has the following conditions: .....

In addition to the regular physical education program, we have available an ADAPTED PHYSICAL EDUCATION program, which is designed to provide individualized prescriptive developmental motor and physical development programs for children.

This program is planned scientifically and cooperatively by the Division of Medical Services and the Division of Physical and Health Education.

If you care to send us any recommendations with reference to the above-named pupil, we should be glad to hear from you. In this event, please fill in the form below and return to the school.

If you wish further details, the school nurse will welcome a telephone call.
(The telephone number is ..... .)

Your follow-up of this pupil and continued reports and recommendations will be welcomed.

Sincerely yours,

Superintendent of Schools

Date .....

Name of Pupil .....

Diagnosis .....

Physician's Recommendations .....

.....

.....

.....
Physician's Signature

SAMPLE REFERRAL FORM FROM PHYSICIAN TO SCHOOL*

PHYSICIAN'S RECOMMENDATION FOR PHYSICAL EDUCATION AND OTHER PHYSICAL ACTIVITIES

Dear Physician:

Pupils enrolled in the public schools participate in physical education which is designed to meet the growth and developmental needs of both boys and girls. In addition many pupils participate in other types of physical activity such as intramural programs, interschool athletics, band, drill team. To identify specific needs of each pupil, the physician, parents, and school personnel must work cooperatively. Please provide us with the information listed below so that we can provide appropriate activities for: _____(Pupil's name)

FINDINGS AND RECOMMENDATIONS TO THE SCHOOL

I have examined _____ and find the following handicaps,
(Pupil's Name)

if any: _____

_____

I recommend the following: (check the appropriate item or items)

_____ 1. No restriction on any type of activity.

_____ 2. Participation in all activities (intramural and other activities in addition to physical education) with the exception of inter-school athletics.

52

_____ 3. No restriction on activities in physical education.

4. Adaptations in physical education to fit individual needs:

_____a. Little running or jumping

_____b. No running or jumping

_____c. No activities involving body contact

_____d. Exercises designed for rehabilitation

_____e. Strenuous conditioning exercises

5. Other specific adaptations or functional limitation: _____

_____

I recommend the adaptation for: _____2weeks, _____1 month, _____3 months, _____6 months
Other period of time: _____

Date _____ Signature: _____

Address: _____

Please mail this form to: (Name and address of school should be given here)

*Form may accompany letter to physician or delivered to physician through family.

REFERRAL FROM PHYSICIAN TO SCHOOL*
SAMPLE FORM

Name _____

Date _____

Department of Physical Education

The Physical Education program at _____ is so planned that every pupil able to be in school should be able to derive benefit from some phase of this program.

After allowing time for undressing, dressing and showers, the actual amount of time left for activities is about 25-30 minutes. All students are enrolled in three physical education classes per week.

Please check (X) either generally or individually the type of Physical Education which you would recommend for this student.

MILD ( )
( ) Badminton practice
( ) Corrective exercise
( ) Throwing - catch
( ) Throwing at target
( ) Table games - chess, etc.
( ) Golf practice
( ) Tennis practice
( ) Archery
( ) Mild folk dance
( ) Shuffleboard
( ) Table tennis
( ) Marching

MODERATE ( )
( ) Table tennis
( ) Girls Volleyball
( ) Folk Dance
( ) Corrective exercise
( ) Softball
( ) Apparatus (horse)
( ) Relay races
( ) Golf
( ) Tennis practice
( ) Badminton
( ) Rhythmic exercises
( ) Indian club drills
( ) Marching
( ) Bowling
( ) Hiking

STRENUOUS ( )
( ) Basketball
( ) Cageball
( ) Tumbling
( ) Apparatus (P-Bars)
( ) Trampoline
( ) Soccer
( ) Field hockey
( ) Speedball
( ) Speedaway
( ) Relay races
( ) Tennis - game
( ) Badminton - game

NOTE:
If strenuous exercise is recommended, it is taken for granted that the mild and moderate are permissable unless exceptions are specifically stated; if moderate activities are recommended, again it is taken for granted that mild activities are permissable. Should you feel that generally the student should take only mild activity, but find that you feel one or two of the moderate activities such as bowling or golf should be included, simply check them.

COMPLETE REST:
If the condition of this student is such at the present that complete rest (recumbent position in bed) is desirable during his/her physical education period, please indicate this and give the number of days he/she should continue these supervised rest periods.

Up to the date of _____ please restrict this student's activities as indicated above. He/she is under my care for _____.

_____

Signed _____ Examining Physician

COMMENTS: _____

_____

_____

*Form may accompany letter to physician or delivered to physician through family

SAMPLE LETTER TO PARENTS FROM SCHOOL

Date _____

Dear Mr. and Mrs. _____

As a result of our recent physical education assessment program, _____ has been referred to me as a possible candidate for the Adapted Physical Education Program at Shell Junior High School. This program can either be taken in place of the regular physical education program or in addition to the regular classes.

Enclosed are copies of our eligibility requirements; aims and objectives of the program; an introductory letter and a fact sheet. Please complete the forms and return them in the enclosed self-addressed envelope. If I can be of further assistance, please contact me at Shell Junior High School, 837-6420.

Respectfully,

Paul Smith
Adapted Physical Education
Program Coordinator

SELECTED BIBLIOGRAPHY

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